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North Carolina MEDICAL JOURNAL

Official Journal of the NORTH CAROLINA MEDICAL SOCIETY

January 1982, Vol. 43, No. 1

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1982 Midwinter Conference: Feb. 5-6,
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Oct. 3, Southern Pines

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May 6-9, 1982

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North Carolina MEDICAL JOURNAL

January 1982, Vol. 43, No. 1

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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INDICATIONS:

Although the principal indication for cloxacillin sodium is in the treatment of infections due to penicillinase-producing staphylococci, it may be used to initiate therapy in such patients in whom a staphylococcal infection is suspected. (See Important Note below.)

Bacteriologic studies to determine the causative organisms and their sensitivity to cloxacillin sodium should be performed.

IMPORTANT NOTE

When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

CONTRAINDICATIONS:

A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication.

RESULTS OF ORAL THERAPY revealed a high percentage of treatment failures with penicillin V potassium, but *no* failures with Tegopen.

		Given Tegopen® (cloxacillin sodium)	Given penicillin V-K
<i>Staphylococcus aureus</i>	(78 patients)	39	39
Returned to clinic at one week		29†	38†
Treatment failure at one week		0	18 (47.4%)
<i>Staphylococcus aureus</i> and <i>Streptococcus pyogenes</i>	(9 patients)	4	5
Returned to clinic at one week		4	5
Treatment failure at one week		0	2 (40%)
No initial bacterial growth	(14 patients)	9	5
All 14 healed, regardless of which antibiotic was administered.			
Beta-hemolytic <i>Streptococcus</i>	(1 patient)	0	1
TOTALS:	102 patients	52 patients	50 patients

†Eleven patients did not return for their one-week checkup. These were all called by telephone, and their families reported

the lesions had healed. One patient was dropped from the study, early, because of adverse reaction to medication.

STUDY: DESCRIPTION/PROTOCOL

- 102 nonselected subjects, with initial bacteriology as follows: 77% *Staphylococcus aureus*, 9% mixed *Staphylococcus aureus* and *Streptococcus pyogenes*, and 1% beta-hemolytic *Streptococcus*.†
- All patients were given randomized therapy—Tegopen capsules or oral solution, or penicillin V-K tablets or oral solution, in recommended dosages according to body weight.

- All patients were evaluated after one week's therapy. If there was no improvement, therapy was switched to the other antibiotic. The "other antibiotic" proved to be Tegopen 100% of the time because no treatment failures had occurred with Tegopen.
- A final assessment of progress was made two weeks after initiation of Tegopen therapy.

†The remainder, to equal 100%, consisted of 14 patients (13%) who exhibited no initial bacterial growth. These 14 were all healed, whether given Tegopen or penicillin V-K.

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WARNING:

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There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

PRECAUTIONS:

The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

ADVERSE REACTIONS:

Gastrointestinal disturbances, such as nausea, epigastric discomfort, flatulence, and loose

stools, have been noted by some patients. Mildly elevated SGOT levels (less than 100 units) have been reported in a few patients for whom pretherapeutic determinations were not made. Skin rashes and allergic symptoms, including wheezing and sneezing, have occasionally been encountered. Eosinophilia, with or without overt allergic manifestations, has been noted in some patients during therapy.

USUAL DOSAGE:

Adults: 250 mg. q. 6h.

Children: 50 mg./Kg./day in equally divided doses q. 6h. Children weighing more than 20 Kg. should be given the adult dose. Administer on empty stomach for maximum absorption.

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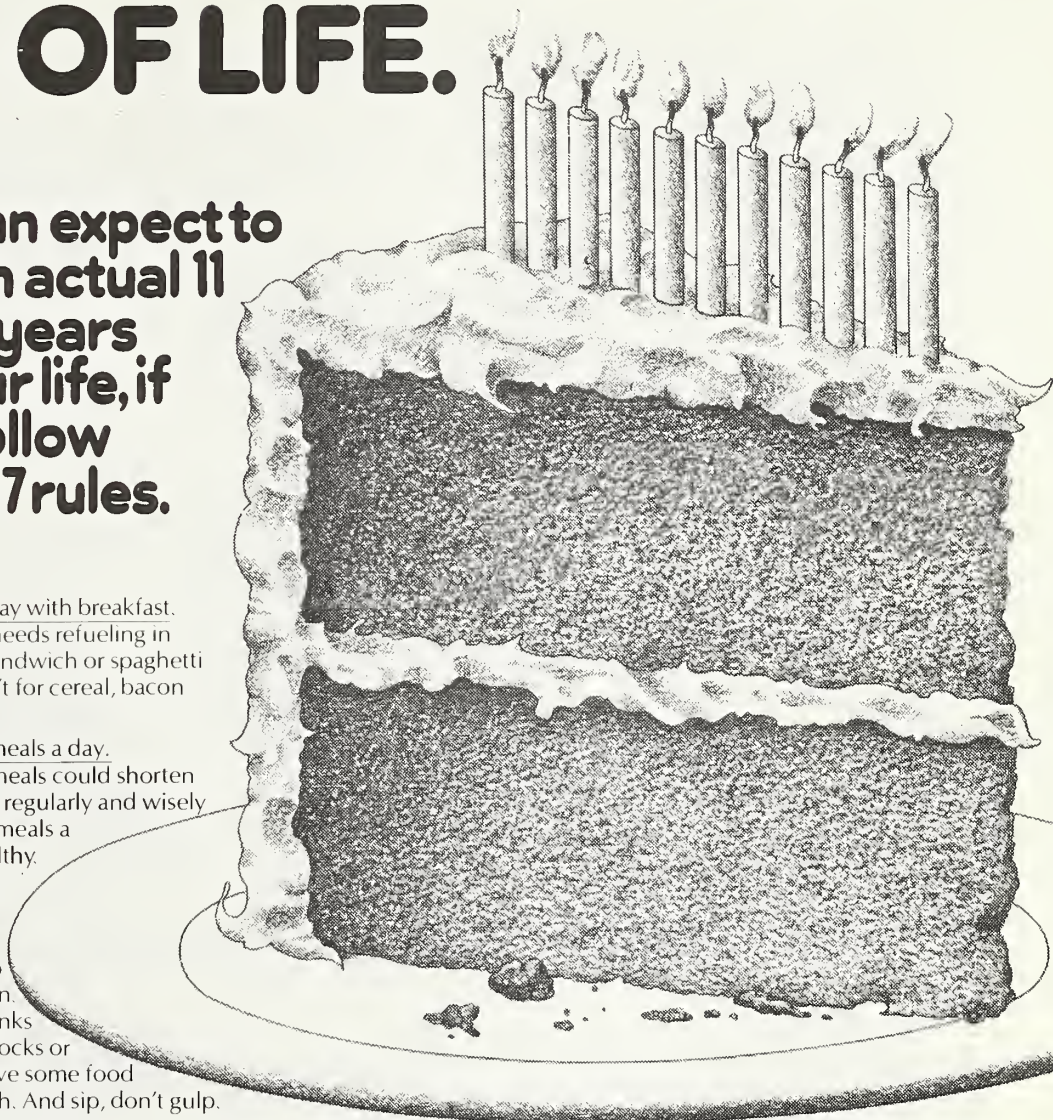
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Ru-Tuss Tablets are an oral antihistaminic, nasal decongestant and anti-secretory preparation.

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CONTRAINDICATIONS Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

WARNINGS Ru-Tuss Tablets may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

PRECAUTIONS Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with glaucoma, or urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See Warnings).

OVERDOSAGE Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

ADVERSE REACTIONS Hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

DOSAGE AND ADMINISTRATION Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

HOW SUPPLIED:

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Bottles of 500 Tablets

Federal law prohibits dispensing without prescription.

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RU-TUSS[®] Expectorant

DESCRIPTION

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Pheniramine Maleate	
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Ammonium Chloride	
Alcohol	

Ru-Tuss Expectorant is an oral antitussive, antihistaminic, nasal decongestant and expectorant preparation.

INDICATIONS AND USAGE Ru-Tuss Expectorant is indicated for symptomatic relief of respiratory congestion associated with pharyngitis, tracheitis, bronchitis, and allergic rhinitis. Also, for the temporary relief of symptoms associated with hay fever, allergies, congestion and cough due to the common cold.

CONTRAINDICATIONS Hypersensitivity to antihistamines. Concomitant use of or hypertensive or antidepressant drug containing a monoamine oxidase inhibitor is contraindicated.

Ru-Tuss Expectorant is contraindicated in patients with glaucoma, bronchial asthma and in women who are pregnant.

WARNINGS Ru-Tuss Expectorant contains codeine phosphate, therefore, the patient should be warned of the potential that this drug may be habit forming. Ru-Tuss Expectorant may cause drowsiness. Patients should be warned of the possible additive effect caused by taking antihistamines with alcohol, hypnotics, sedatives and tranquilizers.

PRECAUTIONS Patients taking Ru-Tuss Expectorant should avoid driving a motor vehicle or operating dangerous machinery (See Warnings). Caution should be taken with patients having hypertension, diabetes, hyperthyroidism and cardiovascular disease. Caution should also be used in patients with pulmonary, hepatic or renal insufficiency.

ADVERSE REACTIONS Ru-Tuss Expectorant may cause drowsiness, lassitude, giddiness, dryness of mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, and insomnia. Overdoses may cause restlessness, excitation, delirium, tremors, euphoria, metabolic acidosis, stupor, tachycardia and convulsions.

DOSAGE AND ADMINISTRATION Adults 1 or 2 teaspoonfuls, orally, every 4 hours, not to exceed 10 teaspoonfuls in any 24-hour period.

Children 6 to 12 years of age: $\frac{1}{2}$ the adult dose, not to exceed 6 teaspoonfuls in any 24-hour period. Children 2 to 6 years of age: $\frac{1}{2}$ teaspoonful every 4 hours, not to exceed 3 teaspoonfuls in any 24-hour period. Children under 2 years of age: Use only as directed by a physician.

HOW SUPPLIED: (16 fl. oz.)

Pint Bottles

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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 8

JANUARY 1982

Dear Colleagues:

Once again the news has to do with Medicaid - but it is good news! As you are all well aware the "18 Visit Limit" levied in the October 1, 1981 Appropriations Act was destined to have serious - even fatal - effect on some North Carolinians afflicted with such diseases as End Stage Renal Disease, malignancies and other critical conditions. Both Barbara D. Matula (Director, Division of Medical Assistance) and Sarah T. Morrow, M.D. understand the critical needs of these unfortunate patients. Through their understanding efforts, with our urging, they were able to reach the Advisory Budget Commission of the Legislature concerning certain exemptions from the "18 Visit Limit". Every member of the North Carolina Medical Society is indebted for their loyalty to Medicine, in the face of ever increasing obstacles. A memorandum written by Barbara D. Matula on November 25, 1981 states:

"The Legislature has clarified its intent to exclude the following illnesses/procedures from the 18 visit limit:

- *1. End Stage Renal Disease
- *2. Chemotherapy and Radiation Therapy for malignancy
- *3. Acute Sickle Cell Disease
- 4. End Stage Lung Disease
- 5. Unstable Diabetes
- *6. Hemophilia
- 7. Terminal Stage - any illness - life threatening

Those marked with an * can probably pass through the system automatically. The others should be reviewed prior to payment. Instructing the physician to code the claim in a special way for [Numbers] 4, 5 and 7, so that they will automatically 'except' for review might be a good way of doing this. (Ed. note: Watch your next MEDICAID BULLETIN for instructions!) These exceptions should be implemented immediately." (emphasis added)

For the entire summer we have all been informed through the media that there is a crisis concerning Health Insurance for State Employees. The mounting costs of modern medical technology have greatly increased the premium costs of this health insurance to the State, in an alarming manner. Several months ago, I obtained a copy of the "Executive Summary - Report to the Committee on Employee Hospital and Medical Benefits on Alternate Funding Methods and Health Cost Containment". I distributed copies to some members of the Medical Society's Leadership and discussed it with all who would listen, between meetings at the Committee Conclave in September. For the past month, the State's "Committee" has seriously attacked the matter and has held "hearings" with various interested groups, including insurance companies and computer corporations. On Tuesday, December 29, 1981, James E. Davis, Joseph D. Russell, Don Chaplin and I will meet with the State's Committee to discuss physician concerns. (Since this NEWSLETTER's deadline is December 28, I shall discuss the outcome of this meeting in the next epistle!)

The State employed a consulting firm to advise them as to the future of the State Employees' Health Insurance. The Consulting firm, William M. Mercer, has recommended a

self-insured plan - an "Administrative Services Only (ASO)" plan. Such a plan would allow the State to contract with a carrier, acting as an administrator or another third party to pay claims on its behalf. The Mercer firm states that there would be an estimated cash flow savings of \$26,000,000 (26M) in the first two years of the program and its report states: "An ASO arrangement will give the Committee the maximum flexibility in selecting the lowest cost ancillary services, instituting plan design changes and implementing cost containment programs."

The ASO plan recommended by the Mercer Company includes the following features (among many others):

1. Increase "major medical coverage to \$1,000,000 (\$1M)".
2. Implement a deductible of \$50 to be applied to all hospitalizations, including emergency care.
3. Establish strict utilization and cost controls.
4. Reimburse physicians "at less than 100% of usual, customary and reasonable charges". (Fee schedule)
5. Implement mandatory second surgical opinion for six frequently performed surgical procedures and elective second opinion for the remainder of elective surgical procedures.
6. Pay 100% for seven selected surgical procedures when performed on an out-patient basis, but only 80% for those procedures when performed in a hospital, unless the physician can specifically justify inpatient surgery.
7. Include coverage for approved ambulatory surgical centers.
8. Provide full payment for six prenatal and three postnatal doctor visits.
9. Require a Pre-admission Testing Program.
10. Provide coverage for up to 10 home health care visits following a hospital admission.
11. Target hypertension, cardiovascular disease and diabetes for screening and prevention.
12. Develop a readable employee benefits handbook, including a discussion of hospice care and prepaid health plans.
13. Authorize the carrier to develop tight claim administration controls, denying payment for procedures and hospital stays of questionable necessity. The report states: "Negotiate reasonable targets for reducing hospital days per thousand and share the savings with the carrier." (emphasis added)
14. Implement Coordination of Benefits savings targets.
15. Implement prospective, concurrent and retrospective claim review.

As you see, there are many areas of concern to physicians and to our patients in this report. I am told that the State is the largest employer in North Carolina and, therefore, any decision on this matter will directly affect a large segment of the population. Please watch the media reports and bulletins which may be issued from the North Carolina Medical Society. Let your opinions, thoughts and concerns be known to me and others who might help us maintain quality health care for all North Carolinians.

The first six months of my administration has been most rewarding. So many of you responded to my plea that you "participate". Every one of your responses to the PRESIDENT'S NEWSLETTER is deeply appreciated and, so far, I have been able to answer every single letter which I have received. Each month the number of your responses increases, indicating your sincere interest in the many complex problems facing organized medicine. Keep 'em coming! The North Carolina Medical Society MUST represent the views and beliefs of the membership! The Society needs your active interest.

I pray that the New Year will bring you and yours the greatest happiness, good health and prosperity which you so deserve!


Josephine E. Newell, M.D.
President



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Among the Metamucil users who expressed a preference, 77.8% (14/18)* preferred BranLax overall, effectiveness of BranLax was favored by 83.3% (10/12),* taste was preferred by 72.2% (13/18)† and the convenience of preparing BranLax was favored by 71.4% (10/14)†.



Among the general study population who expressed a preference, 59.6% (31/52)† preferred BranLax overall, effectiveness of BranLax was favored by 57.6% (19/33), † taste was preferred by 58.8% (30/51)† and convenience of preparing BranLax was favored by 62.5% (20/32).†

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arkitt, D.P. and Meisner, P.: How to manage constipation with high-fiber diet, *Geriatrics* 34:33-40, Feb. 1979. statistically significant at the .05 level. While this difference is not statistically significant, there was a definite directional superiority in favor of BranLax.

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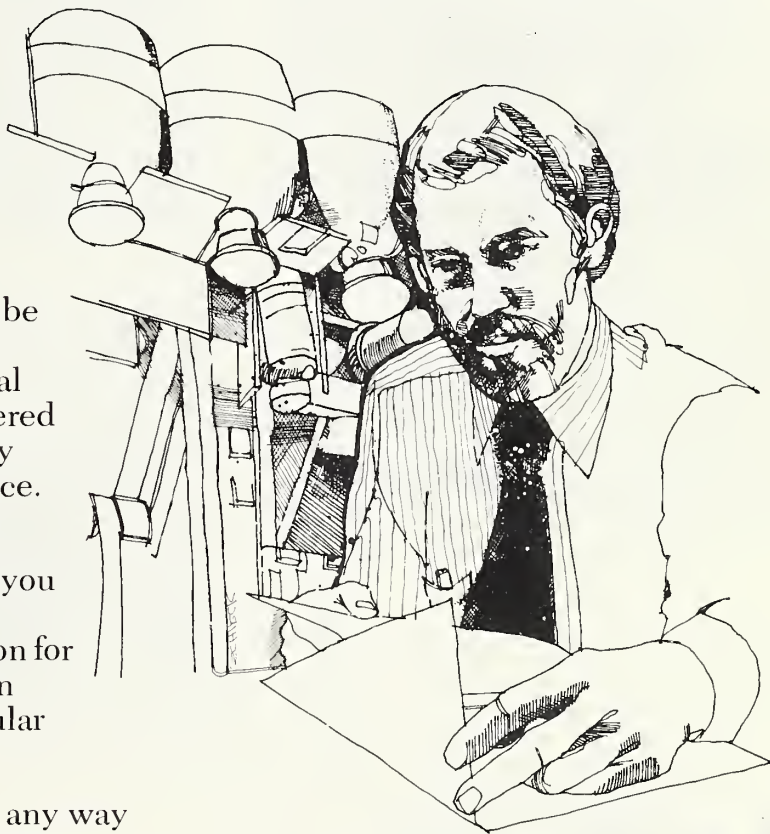
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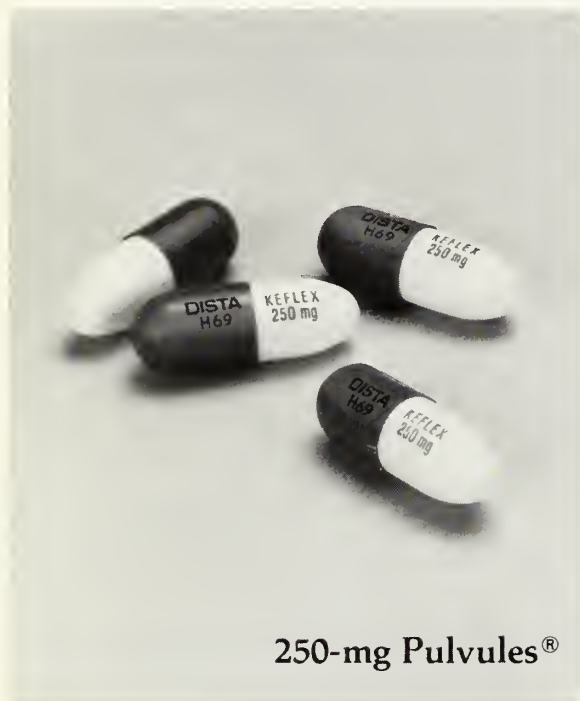
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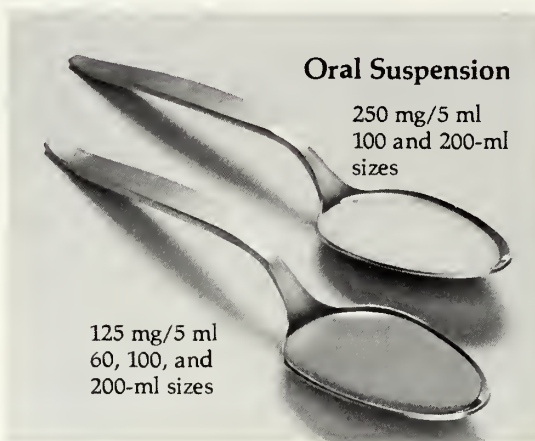
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Strongyloidiasis: A Presentation of 63 Cases

Richard A. Davidson, M.D., M.P.H.

ABSTRACT Strongyloidiasis is an important infection in the more temperate areas of the United States, particularly in patients who are immunosuppressed and therefore susceptible to hyperinfection. Additionally, the organism is reasonably common. Sixty-three patients with strongyloidiasis were surveyed in a search for factors associated with the infection. Sixty-five percent of the patients had notable gastrointestinal complaints; 16% had skin rashes. Forty-four percent had peptic ulcer disease; 22%, active tuberculosis; 22%, prior gastric surgery; and 11%, upper gastrointestinal diverticuli. Forty-nine patients (85%) had eosinophils greater than 5% by peripheral blood smear. Strongyloidiasis should be considered in patients with abdominal pain and/or skin rash coexisting with active tuberculosis and upper gastrointestinal diverticula and in patients with peptic ulcer disease who have continued pain after adequate medical or surgical treatment. In immunosuppressed patients, unexplained abdominal complaints or sepsis should suggest this infection.

STRONGYLOIDES *stercoralis* is an intestinal nematode that is an occasional cause of morbidity in this country, especially in the temperate zones.^{1,2} Under certain conditions (the "hyperinfection" syndrome) it may cause death; it also has recently been described as an opportunistic pathogen.³ Since the development of thiabendazole, a relatively effective means of eradicating this parasite has been available.^{4,5} However, as with many other uncommon infections, diagnosis depends upon consideration in the differential diagnosis. Since there are no pathognomonic signs or symptoms, delineation of predisposing or coexisting factors could increase the recognition of this infection. Most of the reviews of strongyloidiasis have been concerned with small numbers of cases; this study describes the disease in 63 patients and evaluates possible predisposing and coexisting factors.

MATERIALS AND METHODS

Sixty-three cases from the files of the Nashville Veterans Administration Medical Center (NVAMC) between 1968 and 1979 were studied. Inclusion in the series was based upon a positive stool examination for *S. stercoralis*. The clinical records were reviewed for gastrointestinal signs and symptoms, skin eruptions, skin test results, laboratory findings, coexisting diseases and procedures.

RESULTS

Patient characteristics. All patients were white males. The average age was 51.7 years. Twelve patients had served overseas in the military. There was no evidence of temporal clustering of cases by year.

Signs and Symptoms. Forty-one patients (65%) had gastrointestinal complaints, most frequently epigastric pain, bloating and diarrhea. Weight loss and pulmonary signs and symptoms were frequently related to tuberculosis, but were also seen in non-tuberculous patients. Ten patients (16%) had skin rashes,

either urticarial, maculopapular, or both.

Pertinent laboratory findings. The white blood cell count and hematocrit reflected alterations due to underlying diseases only, i.e., renal failure, concurrent infection, sideroblastic anemia or GI bleeding. In uncomplicated *S. stercoralis* infections, total white blood cell counts and hematocrit values were within the normal range. Forty-nine of 57 patients (85%) had recorded eosinophil counts of more than 5%; three of the remaining eight were taking corticosteroids. The range of eosinophil percentages was 0-50, with a mean of 13.0.

Coexisting diseases. Diseases present in the 63 *Strongyloides* patients are recorded in Table I. The high incidence of tuberculosis among the cases was unexpected. Twenty-two percent had active tuberculosis; an additional eight patients (13%) had positive tuberculin skin tests without bacteriologic evidence of active disease. As with the distribution of the *Strongyloides* patients, there was no temporal clustering of tuberculosis patients.

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Table I. Coexisting Disease in 63 Patients with *Strongyloides* Infection

	Patients	Percent
Peptic ulcer disease	28	44
Active tuberculosis	14	22
Positive PPD, negative cultures	8	13
Chronic obstructive lung disease	9	14
Laennec's cirrhosis	6	10
Ischemic heart disease	5	8
Renal allograft	4	6
Carcinoma of the lung	2	3
Lymphoma	2	3
Trauma, diabetes mellitus, sideroblastic anemia, histoplasmosis, Parkinson's disease, thyrotoxicosis, syphilis, schizophrenia, and carcinoma of the prostate occurred once.		

Forty-four percent of the *Strongyloides* patients were diagnosed as having peptic ulcer disease, all on the basis of radiographic studies. Four *Strongyloides* patients (6%) had renal allografts and were taking immunosuppressive medications at diagnosis; the "hyperinfection" syndrome was present in two of these patients. Two patients with pulmonary disease and one with lymphoma were taking corticosteroids. Mixed parasitic infections were present in four patients: two with hookworm, one with *Giardia*, and one with *Entamoeba histolytica*.

Only two patients were admitted with the diagnosis of strongyloidiasis. Two were diagnosed and treated as outpatients; the remainder were hospitalized, usually for gastrointestinal complaints, although four cases were evaluated because of asymptomatic eosinophilia.

Surgery. Table II shows previous surgery in these patients. Twenty-two percent had had gastrectomies, but only one of the 14 tuberculous patients had had a gastrectomy.

Table II. Prior Surgical Procedures in 63 Patients with *Strongyloides* Infection

Procedure	Patients	Percent
Gastric Surgery	14	22
Billroth I	6	9.5
Billroth II	6	9.5
BI + BII	2	3
Herniorrhaphy	7	11
Appendectomy	6	9.5
Cholecystectomy	3	5

Anatomic abnormalities. Seven patients (11%) had upper gastrointestinal diverticula: five duodenal, one gastric, and one both jejunal and duodenal. However, only 63% of the cases had upper gastrointestinal radiographic studies. Colonic diverticuli were present alone in four cases and in combination with duodenal diverticula in two cases. One patient, reported elsewhere,³ with a post-gastrectomy blind loop and a renal transplant, required surgical placement of a tube to deliver high concentrations of thiabendazole to the loop before the infection was controlled.

DISCUSSION

Although strongyloidiasis is most often a mild illness, potentially severe complications may occur when rhabditiform larvae, which are normally passed in the stool, metamorphose into infective, filariform larvae in the gastrointestinal tract. While penetrating the gut, large numbers of filariform larvae may carry enteric bacteria with them, causing sepsis. Paralytic ileus,⁶ prostration and death⁷⁻¹⁵ are common in this "hyperinfection" stage. The colon, liver, pleural fluid and central nervous system may be invaded by larvae, which also may be seen in sputum and urine.

It is likely that filariform larvae penetrate the gut wall or the perianal skin on a smaller scale in many individuals without "hyperinfection," and that this "autoreinfection" plays a role in maintaining this infection for many years. The factors that predispose to this occurrence are not known. However, several conditions were frequent in this series: active tuberculosis (22%), gastrectomy (22%), gastrointestinal diverticula (11%), and peptic ulcer disease (48%). In order to evaluate a possible disease bias among the hospital population, diagnoses and prior gastric surgery were evaluated in a group of 50 randomly selected (but unmatched) patients with negative stool exams. The resultant percentages (active tuberculosis 8%, peptic ulcer disease 30%, prior gastric surgery 10%) were lower than in the study population. Additionally, over the same 10-year period, active

tuberculosis patients made up only 0.75% of admissions. These disparities suggest a more thorough case-control study is in order.

These excesses are hypothetical because of the strong possibility of temporal bias within the comparison group. Additionally, other methodologic inadequacies may be present. In the case of active tuberculosis, for example, a detection bias exists in that the length of hospitalization for tuberculosis patients was longer than for the average admission (46.5 days versus 17.5 days in 1975); this, of course, makes the detection of an intermittently symptomatic illness like strongyloidiasis more likely. Other factors, such as rural residence or poverty, might increase susceptibility or exposure to both strongyloidiasis and tuberculosis. Finally Berkson¹⁶ has suggested that associations between diseases observed in hospitalized patients may be misleading because the hospitalized population is selected by virtue of the presence of more than one disease; this implies that the hospital population is not representative of the population at large.

In spite of these factors, mechanisms for such an association may exist. Purtilo¹¹ noted one patient with both diseases, Palmer¹⁷ postulated the activation of quiescent tuberculosis by pulmonary migration of *Strongyloides*, and Marcial-Rojas⁴ suggested that a common immune defect might be responsible. The ability of active tuberculosis to provoke anergy, ostensibly through depletion of T-cells, and the association of *Mycobacterium leprae* with strongyloidiasis lend support to this hypothesis. There appear to be a number of defects caused by leprosy,¹⁸ including a reduction of lymphocytes in the peripheral blood¹⁹ and the thymus-dependent areas of lymph nodes,²⁰ and prolonged survival of skin grafts.²¹ The possibility exists that a similar unrecognized defect may occur in patients with tuberculosis that may favor long term survival of *Strongyloides* in the gut.

A high prevalence of ulcer disease in *Strongyloides* patients has been previously noted.²² Patients with abdominal pain from ulcer disease might have stools evaluated more

frequently than other patients, again causing a detection bias. Additionally, chronic *Strongyloides* infections may cause duodenal radiographic abnormalities²³ and pain, and thus be diagnosed incorrectly as ulcer disease. Dias⁷ described gastric pain and duodenal ulcerations with parasitic invasion at the base of the ulceration. Should such patients not improve with antacid therapy, they could become surgical candidates. A third possibility relates to the "acid barrier" to infections with gastrointestinal ports of entry.²⁴ Cases of co-existent hypochlorhydria and strongyloidiasis have been frequently reported^{22,25,26} and it has been suggested that hypochlorhydric patients may be more heavily infected, and that the gastric mucosa might be more susceptible to invasion in such individuals.^{24,26} The presence of a "surgical hypochlorhydria" in more than 20% of the present series of patients raises the possibility that such procedures might favor persistence of this infection by allowing the parasites a less hostile environment on their passage through the upper gastrointestinal tract.

Anatomic malformations, such as diverticuli or blind loops, would logically appear to favor persistence of intestinal infections, by providing an "aperistaltic haven" for parasites and bacteria. However, although mentioned occasionally in the literature,³ these conditions apparently have not been assessed to determine patients at risk of developing or maintaining infections with *S. stercoralis*. It is of

interest, therefore, that seven of the present series (of 40 with a complete upper GI series) had upper gastrointestinal diverticula; a prevalence of 2.3% has been noted in all patients with gastrointestinal disease.²⁷

It is important to recognize that negative stools do not rule out this infection. Jones²² found that 20 of 100 patients with strongyloidiasis who had more than five negative stool exams had positive duodenal aspirates. Six patients had positive stools and negative aspirates. Thus, if infection is suspected, duodenal aspirates should be obtained even if stools are negative. Enterotest,[®] an encapsulated string that is swallowed by the patient, then withdrawn, may also prove useful in the diagnosis of this infection.²⁸

Case reviews are not appropriate tools for answering questions covering associations between disease; rather, they provide baseline data on which to base hypotheses. A case-control study evaluating more carefully such associations is being planned. However, the observations in the present series of patients may prove useful in certain clinical situations. Patients from temperate climates who fail to respond to standard peptic ulcer regimens, who continue to have pain after gastrectomy, or who develop gastrointestinal symptoms or a skin rash in association with tuberculosis should be evaluated for the possibility of strongyloidiasis.

Acknowledgment

The author gratefully acknowledges the as-

sistance of Drs. Robert Alford, John Larsh and Robert Fletcher in the preparation of this manuscript.

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OLIVER WENDELL HOLMES [1809-1894]

The most essential part of a student's instruction is obtained, as I believe, not in the lecture room, but at the bedside. Nothing seen there is lost; the rhythms of disease are learned by frequent repetition; its unforeseen occurrences stamp themselves indelibly in the memory.

Medical Essays, "Scholastic and Bedside Teaching"

Sleep Disorders

Part III: Insomnias and Parasomnias

J. Ingram Walker, M.D.

INSOMNIAS are characterized by the sensation of poor sleep; the parasomnias include those conditions in which indescribable physical activities appear in sleep.

INSOMNIA

Approximately 15% of the population complain of insomnia.¹ Insomnia — a complaint, not an illness — is characterized by the sensation of an inadequate quantity or quality of sleep. More specifically, insomnia includes the complaint of difficulty going to sleep, multi-awakenings during the night, or early morning arousals from which it is difficult to return to sleep. The most common conditions causing insomnia will be discussed.

Transient and Situational Insomnia

Transient insomnia, defined as a sleep disturbance lasting less than three weeks, can result from an unfamiliar sleep environment, emotional shock, death of a loved one, divorce or a job change.² Intense positive emotions can also produce transient insomnia as can medical or toxic conditions.

Persistent Insomnia

After a few weeks of poor sleep, whether due to stress, anxiety, or transient environmental conditions, insomnia can develop into a conditioned response that may persist

for decades. An individual who has difficulty falling asleep because of a transient stressful situation may learn to associate the simple process of going to bed and turning off the light with frustration and sleepiness. The harder the individual tries to go to sleep the more difficult it becomes. Conditioned insomnia can be suspected when an insomniac describes sleeping better on vacation or away from his usual bed.³

To break the insomniac's negative thought pattern associated with sleep, the patient can be encouraged to sleep in another bed and preferably in another room. The patient should be asked to arise at a fixed time each morning no matter how sleepy and tired he is. Daytime naps should be strictly prohibited. The patient should go to bed only when sleepy; if the patient fails to go to sleep five to ten minutes after getting into bed, the patient should get out of bed and return only when sleepy.⁴ Relaxation techniques may help some individuals.⁵

Insomnia Associated with Anxiety and Personality Disorders

Sleep onset insomnia and difficulty in maintaining sleep can be related to generalized anxiety, panic, phobias, hypochondriasis and compulsive personality.² In these conditions insomnia seems to result from attempts to control anxiety. This condition should be diagnosed when there is evidence of longer than three weeks' duration of insomnia and an unequivocal psychiatric condition.

Insomnia Associated with Affective Disorders

The clinician, when he hears reports of early morning waking, should always look for other symptoms of depression.⁶ A depressed patient complains of lack of energy, diminished appetite, constipation, decreased sex drive, and a diminished interest in usual activities. Patients complain of feelings of hopelessness and helplessness and they may have suicidal thoughts.

Mildly depressed patients may complain of nothing but vague somatic sensations, such as feelings of heaviness, fullness, dizziness, or being tired and rundown. In these cases the physician should vigorously seek other symptoms of depression, especially if the patient complains of early morning awakening. Occasionally, after a thorough physical examination has ruled out physical causes for the patient's complaints, the patient may be given a sedating tricyclic antidepressant such as amitriptyline. A clinical response after 10 to 14 days to therapeutic doses (generally 150 mg), confirms the diagnosis of depression.

Individuals with an elevated, expansive, or irritable mood that is characteristic of a manic episode, will have a decreased need for sleep.⁷ The individual may have difficulty going to sleep or awaken several hours before the usual time, full of energy. With a full-blown manic episode, the individual may go for days without sleep and yet not feel tired. A manic episode is marked by a triad

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of features: elevated mood, hyperactivity and pressure of speech. Manic individuals manifest an increase in activity, distractibility, and involve themselves in activity that may be self-damaging, such as buying sprees, sexual indiscretions, reckless driving and foolish business ventures.

Insomnia Associated with Schizophrenic Disorders

Individuals in the acute states of schizophrenic psychosis (marked by delusions, auditory hallucinations, and illogical thinking) may have disturbed sleep because of the general turmoil generated by the illness.⁸ Acute schizophrenics generally have difficulty going to sleep and have fragmented sleep during the early part of the night; once they settle into sleep they may not awaken until midday.² On the other hand, those individuals with chronic schizophrenia (characterized by deterioration in self-care, work performance and social relations) sleep surprisingly well,⁸ although they may complain of poor sleep.²

Insomnia Associated with Drug and Alcohol Abuse

Alcohol and sedative-hypnotics lose their pharmacological effects on sleep in two weeks, producing a tendency for patients to raise the dose in order to initiate sleep.² During chronic use of alcohol or a sedative-hypnotic agent, sleep is marked by frequent awakening. Rapid reduction of hypnotics or alcohol produces disrupted sleep patterns with rebound of rapid eye movement (REM) sleep.⁵

The amphetamines, barbiturates, benzodiazepines, tricyclic antidepressants and monoamine oxidase (MAO) inhibitors interfere with REM sleep.⁹ These drugs initially cause suppression of REM sleep, followed by a gradual return to normal REM levels and a rebound increase in REM sleep on drug withdrawal. Some MAO inhibitors, such as phenelzine (Nardil), are able to cause a complete and sometimes prolonged suppression of REM sleep.¹⁰

Sustained Use of CNS Stimulants

Insomnia secondary to stimulants, such as amphetamines and caffeine,

is characterized by delayed sleep onset, a decline in total sleep time and decreased sleep stages three/four and REM reduction.² The poor nocturnal sleep results in daytime grogginess and the tendency to take more stimulant drugs. Caffeine is found in a variety of preparations:¹¹

Fresh brewed coffee — 125 mg per cup
Instant coffee — 90 mg per cup
Decaffeinated coffee — 2 mg per cup
Fresh brewed tea — 70 mg per cup
Instant tea — 45 mg per cup
Colas — 50 mg per 8 oz

Nocturnal Myoclonus

Insomnia may be related to nocturnal myoclonus, a neuromuscular abnormality that causes sudden repeated contractions of the leg muscles during sleep. Because the condition may cause only partial awakening, patients themselves are rarely aware of their leg movements; instead, they typically complain of broken sleep or unrefreshing sleep. The bed partner can usually describe the disturbance in full detail. The jerks typically last from 0.5 to 10 seconds and occur every 20-40 seconds in episodes that last from a few minutes to more than an hour.¹²

Nocturnal myoclonus may be associated with chronic uremia and other metabolic disorders. Some patients with narcolepsy also have myoclonic episodes as do some patients treated with tricyclic antidepressant medications. Withdrawal from anticonvulsants, benzodiazepines and sedative hypnotics can also produce nocturnal myoclonus. Nocturnal myoclonus should be distinguished from "hypnic jerks" — a generalized body twitch commonly occurring in the transition to sleep.²

Nocturnal myoclonus occurs most often in middle-aged and older people. The incidence of nocturnal myoclonus among serious insomniacs ranges from 1% to 15%.¹² Although there is no adequate treatment for idiopathic nocturnal myoclonus, diazepam seems to diminish the severity of the myoclonic jerks.⁵

Restless Legs Syndrome

A condition closely related to

nocturnal myoclonus, restless legs syndrome, generally occurs before one falls asleep. Disagreeable but rarely painful creeping sensations deep inside the calf and occasionally in the thighs and feet cause an almost irresistible urge to move the legs.

Restless legs syndrome has been associated with motor neuron disease, chronic uremia and deficiencies in iron, calcium or vitamin E. About one-third of patients with restless legs syndrome have a familial pattern suggesting that the condition is probably transmitted as an autosomal dominant trait with reduced penetrance.¹³

Treatment of the restless legs syndrome involves removing the cause if possible. Diazepam can be used symptomatically.⁵ An adequate exercise program coupled with muscle relaxation techniques might be of some help.⁵

Medical, Toxic and Environmental Influences Contributing to Insomnia

Any disorder that affects the balance between the neurological wake/sleep systems can cause sleep disturbances. These conditions include spinal cord, subcortical or cortical lesions, brain traumas, infections, and degenerative conditions.⁵ Epilepsy, in some cases, can be aggravated by sleep. In some cases, seizures occur exclusively during sleep. Gibberd and Bateson¹⁴ reported 38 individuals (6%) in a sample of 645 epileptic patients who had seizures exclusively during sleep. Some of these individuals complained about poor sleep while others had intermittent enuresis.

Abnormal thyroid function leads to sleep disturbances. Hyperthyroidism produces short, interrupted sleep with excessive amounts of delta sleep.⁵ Sleep periods return to normal gradually after successful treatment of thyrotoxicosis; it may take up to a year before normal sleep patterns are achieved.¹⁵ Hypothyroidism, on the contrary, causes excessive sleepiness with a lack of deep sleep. After hypothyroidism is treated, sleep gradually returns to normal.⁵

Almost any medical disturbance, either directly or through the ac-

companying pain and malaise, can cause insomnia. Fever has been demonstrated to cause fragmented sleep and reduce delta sleep and REM sleep. Asthma, angina, emphysema, uremia, sudden weight loss and many neuromuscular disorders can produce insomnia. A detailed medical evaluation is essential to evaluate sleep disturbance properly.⁵

Subjective Insomnia

An individual with subjective insomnia complains of insomnia but on careful observation in a sleep laboratory or by a hospital staff is found to sleep quite well. Individuals with hypochondriacal insomnia will be totally preoccupied with their sleep patterns. These patients can be effectively managed by frequent and regular office visits, whereby the physician attempts to offer the patient a relationship rather than a cure. The physician can attempt to help the patient understand what life-time stresses can interfere with the patient's sleep and help the patient deal with those stressful situations more effectively.¹⁶

Insomnia Associated with Aging

Many elderly individuals are convinced that they have insomnia because they feel they should be sleeping as much as in former years. With aging, sleep efficiency is decreased. Some investigators have found that aging is usually associated with decreased sleep time, increased number of awakenings during the night, a decrease in delta sleep and a decrease in REM sleep.¹² Merely informing some elderly patients that sleep requirement decreases with age may help them adjust to their misperception of sleep requirement. Depression should always be considered in the differential diagnosis of insomnia in the elderly.

Another condition that should be seriously considered in the elderly patient complaining of insomnia is "the sundown syndrome." These episodes frequently occur in patients with mild to moderate organic brain syndrome who function fairly well during the daytime, but as night-fall diminishes the environmental cues they become confused, dis-

oriented or agitated and have difficulty sleeping.¹⁷ Delusions and hallucinations may also be present. The treatment for this condition is an antipsychotic medication. Haloperidol 1-2 mg orally in the evening is the drug of choice because of low cardiovascular side effects.¹⁶

PARASOMNIAS

Somnambulism (Sleepwalking)

Sleepwalking is initiated in the first third of the night during delta sleep (stages 3/4) and progresses without full consciousness to leaving the bed and walking about.² Coordination is poor and the individual is likely to stumble or lose balance. Despite open eyes, the patient's expression is blank or dazed. Sleepwalking in children generally takes a self-limited benign course, while in adults sleepwalking is associated with personality disturbance or other psychopathology. Sedative-hypnotics increase sleepwalking in predisposed individuals.² Although there is no specific treatment for somnambulism it is useful to make the house free of dangerous objects and places to fall. The benzodiazepines may be helpful in some cases.¹²

Sleep Terror

Sleep terror, also known as pavor nocturnus or incubus, is a sudden arousal from delta sleep (stage 3/4) associated with extreme panic.² Typically, in the first third of the night the individual sits up in bed and displays a frightened expression, dilated pupils, profuse perspiration, piloerection, rapid breathing and quick pulse. The individual fully awakes 5-10 minutes later; there may be a sense of terror and isolated

visual imagery prior to arousal, but rarely a vivid dream. Most frequently there is amnesia for the entire episode.

In contrast, dream anxiety attacks come during REM activity, occur in the middle or latter third of the night, and are associated with less confusion and sympathetic arousal than sleep terrors.² With dream anxiety attacks there is distinct recall of a detailed dream sequence in which a growing threat seems to lead to ultimate awakening (Table I).

Because the benzodiazepines suppress delta sleep, diazepam (5-20 mg at bedtime) is the drug of choice for sleep terror.¹² Nightmares, however, are more directly related to psychological conflicts, so that psychotherapy is the treatment of choice for this disorder.⁵

Enuresis

Enuresis, or bedwetting, usually occurs in the first third of the night during stage 3/4 sleep. Primary enuresis indicates that the individual has never been consistently dry since infancy. Secondary enuresis means that bedwetting has reappeared after a dry period. Primary enuresis suggests an organic or medical problem while secondary enuresis is more frequently related to psychological problems.⁵

Ten percent of all children at the age of seven wet their beds.⁵ In late latency approximately 5% of children occasionally wet their beds, while 1%-3% of men 18-20 sometimes wet their beds.¹² Among enuretic adults, 35% are schizophrenic.²

Although enuretic episodes can

TABLE I

	Sleep Terror	Dream Anxiety
Onset	Early in night	Late in night
Autonomic arousal	High	None
Dream recall	Usually absent; if present, it is on an isolated single hallucination	Excellent; vivid
Sensorium during attack	Confused	Lucid
State of sleep	III & IV	REM sleep
Etiology	Disorder of arousal	Emotional disturbance

Adapted from Walker JI: *Clinical Psychiatry in Primary Care*. Menlo Park, Calif., Addison-Wesley, 1981.

occur in any sleep stage, enuresis typically occurs in delta sleep in individuals who are characteristically extremely sound sleepers and difficult to wake up.² Similar to other arousal disorders, nocturnal enuresis occurs more frequently during stressful periods.²

Generally no specific treatment is necessary. Indeed too vigorous treatment may increase stress on the child and result in more bedwetting. Ignoring the problem may be the best treatment. Alternatively, numerous behavior modification techniques are available. Patients with other symptoms of emotional problems may benefit from psychotherapy. Imipramine in a dose less than 2 mg/kg carefully titrated may be quite effective in reducing enuretic episodes but the problem may re-

turn after the drug is discontinued. Imipramine is regarded as cardiotoxic and should be used cautiously.

SUMMARY

This series of articles has discussed the diagnosis and treatment of sleep dysfunction. Treatment for sleep disorders consists of more than prescribing a mild sedative or offering brief supportive psychotherapy. Appropriate treatment for sleep dysfunction can replace the potential for drug addiction with the possibility for sound sleep.

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WILLIAM HEBERDEN [1710-1801]

There has lately been established in several of the London hospitals, a plan of courses of lectures in all the branches of knowledge useful to a student of physic. Such plans, if rightly executed, as I have no reason to doubt they will be, must make London a school of physic superior to most in Europe. The experience afforded in an hospital will keep down the luxuriance of plausible theories. Many such have been delivered in lectures, by celebrated teachers, with great applause; but the students, though perfectly masters of them, not having corrected them with what nature exhibits in an hospital, have found themselves more at a loss in the cure of a patient than an elder apprentice of an apothecary.

Letter to Dr. Thomas Percival, October 15, 1794

Special Article

INTRODUCTION:

At one time the medical world was much concerned with fomes or fomites, objects not in themselves "corrupted" which can harbor and pass on pathogens. School children were cautioned to approach banisters with care and toilet seats could become objects of abject horror.

Naturally food handlers could become targets and elaborate measures to protect others from handlers and handlers from themselves were devised.

As information has accumulated, restrictions have become less severe and correspondingly less costly. Recently a working group of the World Health Organization (WHO) has es-

tablished guidelines for a strategy in the control of food hygiene. The description of the program which follows is reprinted from *Morbidity and Mortality Weekly Report*, June 12, 1981.

J.H.F.

Health Examination of Food Handlers—Europe

IN November 1979, a World Health Organization (WHO) working group met in Copenhagen, Denmark, to establish guidelines for examining food handlers as potential sources of foodborne disease and to formulate a new strategy for achieving an acceptable level of control of food hygiene.

At issue was the impact on public health of legal requirements in many countries that food handlers have a medical examination before being employed and at regular intervals thereafter. The working group objected to these requirements for

TABLE I. Summary — cases of specified notifiable diseases, United States

(Cumulative totals include revised and delayed reports through previous weeks.)

Disease	22nd Week Ending			Cumulative First 22 Weeks		
	June 6 1981	May 31 1980	Median 1976-1980	June 6 1981	May 31 1980	Median 1976-1980
Aseptic meningitis	91	73	63	1,489	1,336	873
Brucellosis	4	1	2	57	74	74
Chickenpox	6,104	5,875	5,301	142,556	127,008	129,124
Diphtheria	—	—	1	3	2	35
Encephalitis						
Primary						
(arthropod borne & unspec.)	16	16	12	299	250	250
Post infectious	1	2	7	39	79	83
Hepatitis, Viral						
Type B	332	360	260	8,135	6,830	6,345
Type A	477	470	551	10,546	11,259	12,361
Type unspecified	218	222	150	4,722	4,618	3,763
Malaria	26	48	8	541	700	206
Measles (rubeola)	247	616	1,272	2,000	9,629	17,293
Meningococcal infections						
Total	50	33	33	1,867	1,386	1,229
Civilian	50	33	33	1,861	1,376	1,216
Military	—	—	—	6	10	9
Mumps	111	165	418	2,352	5,826	10,143
Pertussis	17	17	17	417	454	454
Rubella (German measles)	94	233	371	1,336	2,466	8,780
Tetanus	—	1	1	19	24	24
Tuberculosis	576	511	508	11,139	10,930	11,781
Tularemia	5	3	3	65	49	49
Typhoid fever	6	10	10	190	150	150
Typhus fever, tick borne (Rky Mt. spotted)	54	24	25	256	168	145
Venereal diseases						
Gonorrhea						
Civilian	17,506	16,952	16,577	407,096	395,027	395,027
Military	670	462	465	11,959	11,413	11,413
Syphilis, primary & secondary						
Civilian	430	555	358	12,494	10,959	10,120
Military	7	5	5	153	142	131
Rabies in animals	160	201	68	2,982	2,837	1,286

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1981
Anthrax	—
Botulism (Calif. 1)	24
Cholera	1
Congenital rubella syndrome	4
Leprosy	
(Calif. 3, Oreg. 3, Hawaii 4)	98
Leptospirosis (Hawaii 1)	17
Plague	4
Poliomyelitis	
Total	—
Paralytic	—
Psittacosis	
(Upstate N.Y. 2, Wis. 1, Calif. 2)	43
Rabies in man	—
Trichinosis (Calif. 1)	76
Typhus fever, flea borne (endemic, murine) (Tex. 1)	11

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending June 6, 1981 and May 31, 1980 (22nd week)

Reporting Area	Aseptic Meningitis 1981	Brucel- iosis 1981	Chicken pox 1981	Diphtheria 1981	Cum. 1981	Encephalitis			Hepatitis (Viral) by type			Malaria	
						Primary 1981	1980	Post- infectious 1981	B 1981	A 1981	Unspecified 1981	1981	Cum. 1981
United States	91	4	6,104	—	3	16	16	1	332	477	218	26	541
New England	2	—	1,039	—	—	2	—	—	13	5	10	1	26
Maine	—	—	221	—	—	—	—	—	—	—	1	—	1
N.H.	—	—	74	—	—	1	—	—	—	—	—	—	3
Vt.	—	—	58	—	—	—	—	—	—	1	—	1	3
Mass.	—	—	250	—	—	1	—	—	4	1	8	—	12
R.I.	—	—	129	—	—	—	—	—	1	2	—	—	1
Conn.	2	—	307	—	—	—	—	—	8	1	1	—	6
Mid Atlantic	5	—	537	—	—	1	3	1	29	28	10	6	57
Upstate N.Y.	2	—	197	—	—	—	—	—	16	17	3	1	15
N.Y. City	2	—	274	—	—	—	1	—	13	11	7	—	19
N.J.	—	—	NN	—	—	—	—	—	—	—	—	5	16
Pa.	1	—	66	—	—	1	2	1	NA	NA	NA	—	7
E.N. Central	11	—	3,020	—	—	3	4	—	54	46	23	1	21
Ohio	2	—	248	—	—	1	—	—	9	5	1	—	5
Ind.	2	—	308	—	—	—	4	—	3	—	8	—	6
Ill.	—	—	731	—	—	—	—	—	24	14	3	—	3
Mich.	7	—	1,099	—	—	2	—	—	17	27	11	1	7
Wis.	—	—	634	—	—	—	—	—	1	—	—	—	—
W.N. Central	6	1	179	—	—	—	1	—	23	27	14	3	16
Minn.	—	—	—	—	—	—	—	—	2	—	1	2	6
Iowa	—	—	26	—	—	—	1	—	2	4	1	—	2
Mo.	6	—	1	—	—	—	—	—	15	19	10	1	2
N. Dak.	—	—	31	—	—	—	—	—	—	—	—	—	1
S. Dak.	—	—	2	—	—	—	—	—	1	—	—	—	1
Nebr.	—	1	40	—	—	—	—	—	—	1	2	—	—
Kans.	—	—	79	—	—	—	—	—	3	3	—	—	4
S. Atlantic	18	—	531	—	1	—	2	—	94	82	18	4	62
Del.	—	—	11	—	—	—	—	—	2	2	—	—	1
Md.	2	—	126	—	—	—	—	—	21	11	3	2	10
D.C.	—	—	—	—	—	—	—	—	—	—	—	—	1
Va.	2	—	25	—	—	—	—	—	19	3	3	1	11
W. Va.	—	—	163	—	—	—	—	—	2	2	—	—	3
N.C.	—	—	NN	—	—	—	2	—	2	5	2	—	6
S.C.	—	—	—	—	—	—	—	—	7	6	1	—	1
Ga.	2	—	10	—	—	—	—	—	13	12	—	1	8
Fla.	12	—	196	—	1	—	—	—	28	41	9	—	21
E.S. Central	6	2	63	—	—	5	2	—	21	28	11	—	3
Ky.	—	—	51	—	—	—	—	—	2	12	1	—	—
Tenn.	5	2	NN	—	—	3	2	—	9	7	5	—	—
Ala.	1	—	10	—	—	—	—	—	6	1	5	—	2
Miss.	—	—	2	—	—	2	—	—	4	8	—	—	1
W.S. Central	21	1	316	—	—	—	—	—	25	101	56	2	38
Ark.	1	—	1	—	—	—	—	—	1	3	7	—	2
La.	—	—	NN	—	—	—	—	—	6	18	3	—	2
Okla.	—	1	—	—	—	—	—	—	4	4	2	1	4
Tex.	20	—	315	—	—	—	—	—	14	76	44	1	30
Mountain	9	—	128	—	1	1	2	—	8	41	25	—	16
Mont.	1	—	—	—	1	—	2	—	—	1	—	—	—
Idaho	—	—	1	—	—	—	—	—	—	6	—	—	—
Wyo.	—	—	1	—	—	—	—	—	—	—	—	—	—
Colo.	1	—	33	—	—	1	—	—	—	11	1	—	6
N. Mex.	4	—	—	—	—	—	—	—	3	4	1	—	1
Ariz.	3	—	NN	—	—	—	—	—	2	11	14	—	4
Utah	—	—	52	—	—	—	—	—	1	3	6	—	2
Nev.	—	—	41	—	—	—	—	—	2	5	3	—	3
Pacific	13	—	291	—	1	4	2	—	65	119	51	9	302
Wash.	—	—	212	—	—	—	—	—	4	3	1	—	17
Oreg.	1	—	3	—	—	—	1	—	7	8	5	—	8
Calif.	11	—	19	—	—	4	1	—	52	108	45	8	273
Alaska	1	—	1	—	1	—	—	—	1	—	—	—	1
Hawaii	—	—	56	—	—	—	—	—	1	—	—	1	3
Guam	NA	NA	NA	NA	—	NA	—	—	NA	NA	NA	NA	—
P.R.	—	—	12	—	—	—	—	—	3	9	3	—	4
V.I.	NA	NA	NA	NA	—	NA	—	—	NA	NA	NA	NA	2
Pac. Trust Terr.	NA	NA	NA	NA	—	NA	—	—	NA	NA	NA	NA	—

NN Not notifiable. NA Not available.

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont'd). Cases of specified notifiable diseases, United States, weeks ending June 6, 1981 and May 31, 1980 (22nd week)

Reporting Area	Measles (Rubeola)			Meningococcal Infections (Total)			Mumps		Mumps Pertussis	Rubella		Tetanus
	1981	Cum. 1981	Cum. 1980	1981	Cum. 1981	Cum. 1980	1981	Cum. 1981	1981	1981	Cum. 1981	Cum. 1981
United States	247	2,000	9,629	50	1,867	1,386	111	2,352	17	94	1,336	19
New England	—	72	598	2	121	83	4	112	—	2	99	1
Maine	—	5	25	—	18	3	2	22	—	1	33	—
N.H.	—	5	288	—	12	5	—	13	—	—	30	—
Vt.	—	1	223	—	5	9	—	4	—	—	—	—
Mass.	—	54	41	1	29	28	2	35	—	1	26	—
R.I.	—	—	2	—	11	6	—	17	—	—	—	—
Conn.	—	7	19	1	46	32	—	21	—	—	10	1
Mid Atlantic	134	599	2,955	11	242	243	31	368	2	8	151	1
Upstate N.Y.	2	188	553	1	82	83	6	66	1	4	64	—
N.Y. City	4	48	807	4	39	67	1	45	—	4	41	1
N.J.	3	49	638	1	59	50	5	78	—	—	42	—
Pa.	125	314	557	5	62	43	19	179	1	—	4	—
E.N. Central	—	70	1,457	8	213	156	35	696	5	6	284	4
Ohio	—	15	154	3	74	61	2	107	1	—	—	—
Ind.	—	7	79	1	34	30	5	84	—	—	97	—
Ill.	—	20	249	2	51	19	5	127	4	4	67	—
Mich.	—	27	192	2	50	38	12	266	—	—	31	3
Wis.	—	1	783	—	4	8	11	112	—	2	89	1
W.N. Central	—	7	1,105	2	81	57	1	170	1	—	71	2
Minn.	—	3	881	1	29	15	—	6	—	—	6	1
Iowa	—	1	20	—	16	5	1	39	—	—	3	—
Mo.	—	1	61	1	21	26	—	27	1	—	3	1
N. Dak.	—	—	—	—	1	1	—	—	—	—	—	—
S. Dak.	—	—	—	—	3	4	—	1	—	—	—	—
Nebr.	—	1	80	—	—	—	—	3	—	—	1	—
Kans.	—	1	63	—	11	6	—	94	—	—	58	—
S. Atlantic	18	305	1,525	13	449	326	13	301	4	8	125	2
Del.	—	—	1	—	4	2	3	8	—	1	1	—
Md.	—	1	37	1	29	31	—	59	—	—	1	—
D.C.	—	1	—	—	1	1	—	—	—	—	—	—
Va.	—	3	264	2	54	31	—	63	—	—	5	—
W. Va.	—	7	7	—	17	11	3	57	—	—	17	—
N.C.	—	4	106	1	63	65	1	11	—	—	4	—
S.C.	—	—	132	1	59	41	—	7	1	—	7	1
Ga.	5	99	669	6	79	62	3	32	—	6	42	—
Fla.	13	190	309	2	143	82	3	64	3	1	48	1
E.S. Central	—	—	261	3	143	131	1	60	—	2	24	1
Ky.	—	—	42	1	43	46	1	28	—	1	13	—
Tenn.	—	—	122	1	41	32	—	19	—	—	10	—
Ala.	—	—	17	1	44	32	—	12	—	1	1	1
Miss.	—	—	80	—	15	21	—	1	—	—	—	—
W.S. Central	68	680	842	2	323	156	11	149	—	15	112	3
Ark.	—	—	13	—	20	12	1	1	—	—	1	1
La.	—	—	11	—	80	54	—	3	—	—	9	—
Okla.	—	6	711	—	25	13	—	—	—	—	—	1
Tex.	68	674	107	2	198	77	10	145	—	15	102	1
Mountain	—	24	237	2	63	52	3	85	2	2	56	1
Mont.	—	—	1	—	5	2	—	5	1	—	3	—
Idaho	—	1	—	—	3	4	—	4	—	—	2	—
Wyo.	—	—	—	—	—	2	—	1	—	—	1	—
Colo.	—	5	14	—	29	13	1	39	—	—	26	—
N. Mex.	—	5	11	—	4	6	—	—	—	—	2	—
Ariz.	—	3	163	2	14	8	2	14	1	2	13	1
Utah	—	—	41	—	4	2	—	11	—	—	3	—
Nev.	—	10	7	—	4	15	—	11	—	—	6	—
Pacific	27	243	649	7	232	182	12	411	3	51	414	4
Wash.	—	1	153	—	43	31	2	119	1	—	53	—
Oreg.	—	3	—	4	35	38	—	47	—	11	30	—
Calif.	27	237	486	3	146	111	5	227	2	40	326	4
Alaska	—	—	5	—	4	2	—	4	—	—	—	—
Hawaii	—	2	5	—	4	—	5	14	—	—	5	—
Guam	NA	1	4	—	—	1	NA	1	NA	NA	—	—
P.R.	8	182	67	—	8	7	2	72	—	—	3	—
V.I.	NA	4	5	—	—	1	NA	4	NA	NA	—	—
Pac. Trust Terr.	NA	—	6	—	—	—	NA	4	NA	NA	1	—

NA Not available.

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont'd). Cases of specified notifiable diseases, United States, weeks ending June 6, 1981 and May 31, 1980 (22nd week)

Reporting Area	Typhus Fever (Tick borne) (RMSF)							Venereal Diseases (Civilian)					Rabies (in Animals)	
	Tuberculosis		Tula- remia	Typhoid Fever				Gonorrhea			Syphilis (Pri. & Sec.)			
	1981	Cum. 1981	Cum. 1981	1981	Cum. 1981	1981	Cum. 1981	1981	Cum. 1981	Cum. 1980	1981	Cum. 1981	Cum. 1980	Cum. 1981
United States	576	11,139	65	6	190	54	256	17,506	407,096	395,027	430	12,494	10,959	2,982
New England	18	299	—	—	10	—	3	443	9,878	10,123	13	270	234	11
Maine	—	23	—	—	1	—	—	13	496	590	—	1	4	6
N.H.	1	4	—	—	—	—	—	14	359	332	—	9	1	1
Vt.	—	9	—	—	—	—	—	13	180	246	—	13	3	—
Mass.	12	164	—	—	7	—	2	209	3,973	4,163	10	175	130	1
R.I.	1	19	—	—	—	—	—	25	501	605	—	16	13	—
Conn.	4	80	—	—	2	—	1	169	4,369	4,187	3	56	82	3
Mid-Atlantic	76	1,848	10	5	36	4	7	1,572	47,890	42,773	49	1,898	1,579	13
Upstate N.Y.	13	311	10	—	6	1	2	571	8,017	7,757	17	175	127	12
N.Y. City	30	712	—	2	21	—	2	NA	19,354	16,937	NA	1,146	1,037	—
N.J.	4	403	—	3	5	1	1	521	9,419	7,610	15	251	206	—
Pa.	29	422	—	—	4	2	2	480	11,100	10,469	17	326	209	1
E.N. Central	58	1,473	1	—	13	—	2	1,848	61,258	61,836	28	806	1,050	386
Ohio	23	272	—	—	—	—	2	623	21,681	16,667	6	114	163	30
Ind.	—	148	—	—	—	—	—	—	5,653	6,154	—	7	88	19
Ill.	17	599	—	—	6	—	—	251	15,260	19,313	—	411	583	310
Mich.	15	383	1	—	5	—	—	625	13,178	13,672	18	159	174	2
Wis.	3	71	—	—	2	—	—	349	5,486	6,030	4	45	42	25
W.N. Central	30	398	5	1	7	1	6	1,084	19,416	17,218	15	236	130	1,282
Minn.	2	58	—	—	2	—	—	234	3,137	2,971	7	90	44	230
Iowa	4	48	—	—	2	—	—	109	1,958	1,930	1	13	8	425
Mo.	15	175	4	—	1	—	2	526	8,928	7,127	6	110	67	107
N. Dak.	2	19	—	—	—	—	—	16	265	258	1	4	1	196
S. Dak.	—	30	—	—	1	—	—	25	550	538	—	2	1	136
Nebr.	6	15	1	1	1	—	—	76	1,521	1,490	—	3	3	97
Kans.	1	53	—	—	—	1	4	98	3,057	2,904	—	14	6	91
S. Atlantic	136	2,494	6	—	24	30	137	4,584	100,784	97,029	161	3,302	2,600	170
Del.	3	35	1	—	—	—	—	73	1,480	1,325	—	7	6	—
Md.	13	258	—	—	7	2	16	486	11,164	10,111	8	258	178	1
D.C.	4	152	—	—	1	—	—	377	6,428	6,890	9	276	181	—
Va.	14	244	—	—	1	6	20	465	9,105	8,337	16	307	234	28
W. Va.	7	82	—	—	3	—	2	61	1,516	1,244	—	9	10	9
N.C.	12	424	1	—	1	11	42	754	15,703	14,402	8	249	189	1
S.C.	17	237	2	—	—	8	40	334	9,501	9,337	9	227	136	13
Ga.	29	399	2	—	2	—	13	963	20,202	18,213	51	848	782	83
Fla.	37	663	—	—	9	3	4	1,071	25,685	27,170	60	1,121	884	35
E.S. Central	34	953	2	—	5	7	30	2,381	34,051	32,385	55	834	869	195
Ky.	9	250	2	—	—	—	2	222	4,317	4,697	—	39	68	57
Tenn.	10	316	—	—	1	6	20	593	12,652	11,321	28	336	347	110
Ala.	9	257	—	—	2	1	2	1,160	10,749	9,693	21	219	173	28
Miss.	6	130	—	—	2	—	6	406	6,333	6,674	6	240	281	—
W.S. Central	121	1,200	29	—	15	11	66	1,996	53,889	51,045	67	3,018	2,146	567
Ark.	12	120	15	—	—	3	15	96	3,739	3,817	5	60	72	80
La.	28	244	2	—	—	—	—	328	8,717	9,030	—	671	508	16
Okla.	11	136	8	—	3	8	44	239	5,663	5,057	4	78	39	103
Tex.	70	700	4	—	12	—	7	1,333	35,771	33,141	58	2,209	1,527	368
Mountain	15	321	10	—	15	—	4	574	16,046	15,225	6	320	263	71
Mont.	—	22	4	—	4	—	—	13	551	573	—	8	1	49
Idaho	—	5	2	—	—	—	1	17	690	711	3	7	8	—
Wyo.	1	5	1	—	—	—	2	26	370	435	—	4	7	4
Colo.	—	41	2	—	3	—	—	227	4,361	4,058	3	99	65	1
N. Mex.	3	63	—	—	—	—	—	73	1,757	1,884	—	67	48	12
Ariz.	4	131	—	—	8	—	—	186	4,996	4,219	—	69	93	3
Utah	—	16	1	—	—	—	—	32	753	711	—	8	5	—
Nev.	7	38	—	—	—	—	1	NA	2,568	2,634	NA	58	36	2
Pacific	88	2,153	2	—	65	1	1	3,024	63,884	67,393	36	1,810	2,088	287
Wash.	—	179	1	—	3	—	—	177	5,168	5,602	—	55	106	—
Oreg.	1	74	—	—	3	—	—	240	4,192	4,715	2	42	45	2
Calif.	87	1,816	1	—	59	1	1	2,455	51,662	54,012	30	1,673	1,860	272
Alaska	—	24	—	—	—	—	—	73	1,618	1,612	—	5	3	13
Hawaii	—	60	—	—	—	—	—	79	1,244	1,452	4	35	74	—
Guam	NA	—	—	NA	—	NA	—	NA	14	57	NA	—	2	—
P.R.	6	147	—	—	3	—	—	62	1,399	1,083	12	300	228	29
V.I.	NA	1	—	NA	1	NA	—	NA	57	89	NA	3	10	—
Pac. Trust Terr.	NA	24	—	NA	—	NA	—	NA	144	176	NA	—	—	—

NA: Not available

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE IV. Deaths in 121 U.S. cities,* week ending June 6, 1981 (22nd week)

Reporting Area	All Causes, by Age (Years)							P&I**	Reporting Area	All Causes, by Age (Years)							P&I**
	All Ages	65	45-64	25-44	1-24	1	Total			All Ages	65	45-64	25-44	1-24	1	Total	
New England	698	448	179	26	18	27	69		S. Atlantic	1,207	666	364	94	40	43	31	
Boston, Mass.	197	124	55	8	3	7	31		Atlanta, Ga.	145	71	40	14	11	9	2	
Bridgeport, Conn.	43	28	14	1	—	—	2		Baltimore, Md.	231	128	87	10	2	4	4	
Cambridge, Mass.	23	20	2	1	—	—	4		Charlotte, N.C.	61	32	21	1	2	5	2	
Fall River, Mass.	19	14	4	—	1	—	2		Jacksonville, Fla.	106	56	32	9	5	4	8	
Hartford, Conn.	63	38	18	3	3	1	2		Miami, Fla.	103	56	34	9	3	1	1	
Lowell, Mass.	26	15	8	1	2	—	1		Norfolk, Va.	54	30	13	2	4	5	2	
Lynn, Mass.	18	12	5	—	—	1	—		Richmond, Va.	61	39	15	4	2	1	1	
New Bedford, Mass.	27	23	4	—	—	—	—		Savannah, Ga.	37	17	14	3	1	2	3	
New Haven, Conn.	80	42	16	4	6	12	7		St. Petersburg, Fla.	86	68	11	2	2	3	3	
Providence, R.I.	66	41	18	3	1	3	10		Tampa, Fla.	69	42	17	5	2	3	3	
Somerville, Mass.	6	6	—	—	—	—	—		Washington, D.C.	202	97	64	30	6	5	2	
Springfield, Mass.	38	24	11	—	1	2	—		Wilmington, Del.	52	30	16	5	—	1	—	
Waterbury, Conn.	38	22	14	1	—	1	4		E.S. Central	732	431	209	50	22	20	27	
Worcester, Mass.	54	39	10	4	1	—	6		Birmingham, Ala.	143	82	41	10	7	3	1	
Mid Atlantic	2,757	1,805	615	161	85	91	95		Chattanooga, Tenn.	40	28	8	3	1	—	—	
Albany, N.Y.	32	19	6	2	1	4	—		Knoxville, Tenn.	34	25	8	—	1	—	1	
Allentown, Pa.	24	16	6	2	—	—	—		Louisville, Ky.	122	69	39	5	5	4	12	
Buffalo, N.Y.	150	102	32	8	5	3	14		Memphis, Tenn.	172	88	59	13	3	9	7	
Camden, N.J.	52	34	13	—	3	2	2		Mobile, Ala.	67	48	12	4	3	—	2	
Elizabeth, N.J.	26	18	4	2	1	1	1		Montgomery, Ala.	46	29	11	3	—	3	—	
Erie, Pa.†	41	32	8	1	—	—	—		Nashville, Tenn.	108	62	31	12	2	1	4	
Jersey City, N.J.	52	32	10	4	5	1	1		W.S. Central	1,302	727	335	103	67	65	36	
N.Y. City, N.Y.	1,372	894	304	96	42	36	35		Austin, Tex.	52	25	14	8	5	—	3	
Newark, N.J.	50	20	20	5	1	4	1		Baton Rouge, La.	41	21	16	1	3	—	3	
Paterson, N.J.	36	25	8	—	—	3	3		Corpus Christi, Tex.	46	31	6	3	2	4	—	
Philadelphia, Pa.	508	319	118	27	19	25	23		Dallas, Tex.	201	125	40	15	10	11	4	
Pittsburgh, Pa.†	70	43	18	6	2	1	2		El Paso, Tex.	40	22	9	5	3	1	2	
Reading, Pa.	36	24	7	1	2	2	—		Fort Worth, Tex.	95	49	23	12	3	8	3	
Rochester, N.Y.	103	77	20	4	—	2	6		Houston, Tex.	345	164	100	31	24	26	3	
Schenectady, N.Y.	30	25	4	—	1	—	2		Little Rock, Ark.	74	46	20	3	1	4	5	
Scranton, Pa.†	33	22	9	1	—	1	1		New Orleans, La.	117	66	36	7	7	1	1	
Syracuse, N.Y.	61	43	10	2	1	5	2		San Antonio, Tex.	168	91	51	14	6	6	6	
Trenton, N.J.	36	25	9	—	2	—	1		Shreveport, La.	41	33	7	1	—	—	—	
Utica, N.Y.	17	14	2	—	—	1	1		Tulsa, Okla.	82	54	13	8	3	4	6	
Yonkers, N.Y.	28	21	7	—	—	—	—		Mountain	617	342	140	57	46	32	23	
E.N. Central	2,377	1,438	613	149	77	100	57		Albuquerque, N. Mex.	81	25	20	16	20	—	2	
Akron, Ohio	65	48	12	2	2	1	—		Colo. Springs, Colo.	25	16	9	—	—	—	2	
Canton, Ohio	43	28	12	2	1	—	2		Denver, Colo.	131	81	24	11	2	13	3	
Chicago, Ill.	545	309	147	43	20	26	10		Las Vegas, Nev.	76	39	20	8	7	2	6	
Cincinnati, Ohio	167	107	43	5	4	8	11		Ogden, Utah	21	11	4	4	1	1	1	
Cleveland, Ohio	185	110	47	10	7	11	1		Phoenix, Ariz.	145	90	27	10	7	11	1	
Columbus, Ohio	181	100	59	10	7	5	5		Pueblo, Colo.	21	15	4	—	1	1	3	
Dayton, Ohio	116	71	28	8	5	4	3		Salt Lake City, Utah	37	15	10	3	5	4	1	
Detroit, Mich.	285	169	68	26	11	11	4		Tucson, Ariz.	80	50	22	5	3	—	4	
Evansville, Ind.	45	35	8	1	1	—	2		Pacific	1,710	1,100	376	119	57	56	67	
Fort Wayne, Ind.	61	40	17	2	1	1	4		Berkeley, Calif.	17	9	3	2	2	—	—	
Gary, Ind.	19	6	7	2	3	1	—		Fresno, Calif.	60	37	14	3	3	3	2	
Grand Rapids, Mich.	44	28	12	1	—	3	2		Glendale, Calif.	18	15	1	1	—	1	1	
Indianapolis, Ind.	170	96	47	12	5	10	2		Honolulu, Hawaii	47	24	18	3	2	—	3	
Madison, Wis.	34	23	9	—	1	1	1		Long Beach, Calif.	93	58	25	5	2	3	2	
Milwaukee, Wis.	120	75	30	6	3	6	—		Los Angeles, Calif.	412	280	75	33	16	7	16	
Peoria, Ill.	41	23	13	2	—	3	3		Oakland, Calif.§	84	51	18	7	4	4	4	
Rockford, Ill.	41	25	11	1	1	3	1		Pasadena, Calif.	24	15	6	1	—	2	1	
South Bend, Ind.	47	33	9	4	—	1	3		Portland, Oreg.	126	84	28	7	2	5	3	
Toledo, Ohio	111	74	21	8	5	3	2		Sacramento, Calif.	83	42	21	10	5	5	5	
Youngstown, Ohio	57	88	13	4	—	2	1		San Diego, Calif.	138	86	33	9	5	5	2	
W.N. Central	799	510	184	40	33	32	42		San Francisco, Calif.	161	111	34	10	2	4	3	
Des Moines, Iowa	47	36	9	1	—	1	2		San Jose, Calif.	179	117	38	12	6	6	15	
Duluth, Minn.	32	20	8	1	3	—	2		Seattle, Wash.	166	101	39	14	5	7	5	
Kansas City, Kans.	37	32	4	1	—	—	—		Spokane, Wash.	58	41	11	1	3	2	3	
Kansas City, Mo.	125	76	26	10	5	8	6		Tacoma, Wash.	44	29	12	1	—	2	2	
Lincoln, Nebr.	33	27	4	2	—	—	1		Total	12,199††	7,467	3,015	804	445	466	447	
Minneapolis, Minn.	108	69	25	4	5	5	2										
Omaha, Nebr.	86	52	23	3	2	6	5										
St. Louis, Mo.	194	104	54	10	16	10	12										
St. Paul, Minn.	71	53	15	1	1	1	2										
Wichita, Kans.	66	41	16	7	1	1	10										

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

§Data not available this week. Figures are estimates based on average percent of regional totals.

several reasons. First, it has not been determined that most outbreaks of foodborne disease are connected with food handlers. Second, medical examinations and laboratory analyses are very expensive, making it possible to identify only a small proportion of the carriers of pathogenic organisms. Finally, because of the rapid turnover of workers in the food industry, it is difficult for administrators to assure that all employees are checked. These three points are discussed in detail below.

In most European countries, a medical examination before employment in the food industry is required by law. Requirements for later, regularly scheduled examinations vary from country to country. Food handlers (excluding homemakers) account for 6%-10% of the population in these countries.

A number of participants in the working group expressed doubts about the effectiveness of the national policies of their countries regarding the medical examination of food handlers. The group agreed that insufficient resources are available for examining all the workers and that, if these examinations are made routinely and on a general basis, the cost represents an inefficient use of available resources. Therefore, the participants urged that attention be concentrated on workers most likely to be carriers of pathogenic organisms and on persons who work with foods that permit rapid growth of pathogenic organisms and/or are consumed by especially vulnerable groups such as children and the elderly.

The group further agreed that the mandatory medical examinations of food handlers in many European countries are not effective for detecting carriers, and that routine microbiologic examinations of stool specimens from food handlers may not identify healthy carriers of enteropathogenic organisms. However, appropriate tests do reveal some sources of staphylococcal infection (e.g., infected skin lesions) and may provide guidance for more in-depth investigations. Most members of the group agreed that, although human carriers may be a source of intestinal pathogens that cause contamination of food, other sources such as raw foods or food items that are improperly cooked or stored are much more important. Past experience also indicates that routine examination of all food handlers may not be an effective prevention strategy, that medical examinations should be aimed at specific problems, and that governments should consider appropriate education of workers and strict supervision and control of food hygiene as much more effective alternatives.

Among the recommendations of the working group were the following:

1. Since no medical examination (even if it includes detailed microbiologic tests) can ever reliably exclude all carriers of enteropathogens, all food handlers must appreciate their responsibility and always practice the highest levels of hygiene. To that end, they must be instructed in hygienic practices. This instruction should be the responsibility not only of health au-

thorities but also of employers in the food-handling industry.

2. Occupational health nurses and other appropriately trained health personnel have an important role in the food industry, since they can assist in investigating certain conditions such as staphylococcal skin infections, encourage workers to report episodes of illness, and assist in controlling the health and hygiene of food handlers.

3. Examinations of food handlers, including microbiologic tests, should be performed promptly and thoroughly when epidemiologic or clinical evidence indicates a need, e.g., when food handlers have been ill or when an outbreak of foodborne disease has occurred in the community.

4. No persons should be allowed to work in situations in which they could contaminate food if they have symptoms of gastrointestinal infection or obvious infection of the skin or upper respiratory tract. This is essential even in the absence of positive microbiology test findings.

5. Since thorough washing of the hands is very effective in removing enteropathogens, all persons engaged in preparing food commercially or in the home should wash hands thoroughly and frequently.

6. Research should be conducted to determine the efficiency and effectiveness of medical examinations of food handlers in the prevention of foodborne diseases.

Reference

Pan American Health Organization. Health examination of food handlers. *Epidemiological Bulletin* 1980, 1:9,10.

SIR THOMAS BROWNE [1605-1682]

Hippocrates wisely considered Dreams as they presaged Alterations in the Body, and so afforded hints toward the preservation of Health, and prevention of Diseases; and therein was so serious as to advise Alteration of Diet, Exercise, Sweating, Bathing and Vomiting.

A Letter to a Friend

Toxic Encounters of the Dangerous Kind

THE ARUM FAMILY

This article is about a notorious but attractive family with noxious potential. It is not a story about the Cosa Nostra or a band of Western desperados but rather a short discussion of the most common plants with toxic potential ingested by children under the age of five years (as reported to the National Clearinghouse for Poison Control Centers).

In recent years plants have been the most common foreign substance ingested by preschool children; about 11% of the total reported cases. Approximately 85% of such ingestions have been by children under three years of age; 70% by children less than two years old. Probably 90% or more of preschool children who ingest plant elements do not develop symptoms, 9% are mildly symptomatic and less than 0.5% require hospitalization. Death from a plant ingestion by a small child is quite rare in this country.

Two most common plants eaten according to recent reports, are members of the Arum family — Philodendron (#1) and Diffenbachia (#2). Other members of this family include the Caladium, elephant ear, Dracunculus, jack-in-the-pulpit and calla lily. All parts of these large-leaved plants contain millions of tiny, insoluble, needle-shaped intercellular calcium oxalate crystals. When an

unwary victim bites an attractive leaf, the small knife-like crystals become embedded in the tongue and buccal mucosa. This oral adventure smarts! The result is intense pain and inflammation described as being similar to "chewing ground glass" or "biting a hornet's nest." The pain is usually followed immediately by swelling of the lips, tongue and palate. Pharyngeal and laryngeal edema are quite rare. The calcium oxalate crystals generally pass undissolved through the GI tract and present little or no danger of systemic poisoning by absorption. Vomiting and diarrhea can occur but generally do not.

The treatment is simple and nonspecific: remove the plant from the victim's mouth and give the patient a popsicle (probably the best treatment), ice cream, cold milk or a cold pack. Antihistamines may be useful in reducing the edema.

You probably have a Philodendron at home and a Diffenbachia in your office, so beware!

Ronald B. Mack, M.D.
Department of Pediatrics
Bowman Gray School of Medicine
of Wake Forest University
Winston-Salem, N.C., and
Chairman, Committee on Accidents
and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics

JOHN MILTON [1608-1674]

Then also in course might be read to them out of some not tedious Writer the Institution of Physick; that they may know the tempers, the humours, the seasons, and how to manage a crudity [indigestion]; which he who can wisely and timely do, is not only a great Physitian to himself, and to his friends, but also may at some time or other, save an Army by this frugal and expenseless means only; and not let the healthy and stout bodies of young men rot away under him for want of this discipline; which is a great pity, and no less a shame to the Commander.

Of Education

First Class First Aid

In
your
office

In
their
homes

Recommend

NEOSPORIN® Ointment (POLYMYXIN B-BACITRACIN-NEOMYCIN)

- Broad-spectrum antibacterial
- Handy applicator tip

DESCRIPTION: Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base), petrolatum white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets

INDICATIONS: *Therapeutically* (as an adjunct to systemic therapy when indicated), for bacterial infections, primary or secondary, due to susceptible organisms, as in: • infected wounds, skin grafts, surgical incisions, otitis externa • primary pyodermas (impetigo, erythema, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection. *Prophylactically*, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and promote wound healing.

CONTRAINDICATIONS: Not for use in the eyes or in the external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neo-



mycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section). Complete literature available on request from Professional Services Dept. PML.



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Motrin[®] vs aspirin w/codeine...

(ibuprofen)



compare the analgesic effect

A *Motrin* 400 mg dose relieved postsurgical dental pain as effectively as a combination of 650 mg aspirin and 60 mg codeine (two aspirin-with-codeine No. 3 tablets) in a study of 129 patients.

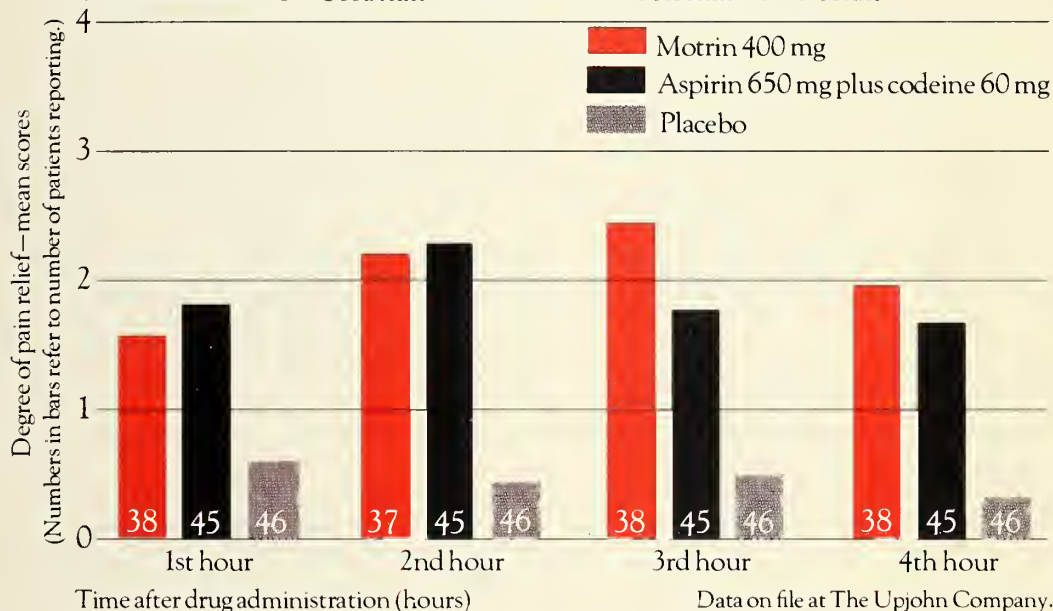
In this double-blind, placebo-controlled, randomized study, no statistically significant difference in relief of pain was noted at 1, 2, and 4 hours between the *Motrin* and aspirin-with-codeine groups... with *Motrin* being significantly more effective ($p = 0.03$) at the three-hour interval.

Active treatment was significantly more effective ($p < 0.0001$) than placebo at all time intervals.

Comparison of pain relief

Motrin vs aspirin-codeine combination

4 = Excellent relief 3 = Good relief 2 = Fair relief 1 = Poor relief 0 = No relief



One tablet q4-6h prn

For relief of mild to moderate pain:

Motrin[®] 400mg TABLETS
ibuprofen, Upjohn

- Not a narcotic • Not addictive • Not habit forming • Nonscheduled
- Acts peripherally • Relieves pain rapidly • Relieves inflammation • Indicated in acute and chronic pain • Well tolerated (The most common side effect with *Motrin* is mild gastrointestinal disturbance.)

Please turn the page for a brief summary of prescribing information.

Upjohn

Motrin[®] (ibuprofen)

now proved an effective analgesic for mild to moderate pain

Motrin[®] Tablets (ibuprofen, Upjohn)

Indications and Usage: Relief of mild to moderate pain.

Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. *Aspirin:* Used concomitantly may decrease Motrin blood levels.

Coumarin: Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy nor by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea, epigastric pain, heartburn, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness, headache, nervousness. **Dermatologic:** Rash (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis, including flares of chronic disease. Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain. Do not exceed 2400 mg per day.

Caution: Federal law prohibits dispensing without prescription.

For additional product information, see your Upjohn representative or consult the package insert.

Upjohn

THE UPJOHN COMPANY
Kalamazoo, Michigan 49001 USA

MED B-4-S

It's time we took
arthritis seriously

It's a myth that arthritis is just the minor aches and pains of old age. It's a majorcrippler that attacks. Anybody. Anytime. 31 million Americans have it. There are almost a million new cases a year. And six out of ten are under 60. Symptoms can come and go for years. So if you don't know the warning signals, find out. If you'd like information that could help you—or you'd like to help us—write to the Arthritis Foundation, Box 19000, Atlanta, GA 30326.



ARTHRITIS
FOUNDATION

Editorials

SUGGESTIONS FOR AUTHORS

The NORTH CAROLINA MEDICAL JOURNAL welcomes the contribution of original articles — scientific, historic, and editorial — provided that they have neither been published previously nor have they been simultaneously submitted for publication in other medical periodicals. Papers concerned with all aspects of the practice of medicine in North Carolina are particularly solicited.

In addition, in view of "The Copyright Revision Act of 1976," letters of transmission to the editor should contain the following language: "In consideration of the North Carolina Medical Society's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns, or otherwise conveys all copyright ownership to the North Carolina Medical Society in the event that such work is published in the NORTH CAROLINA MEDICAL JOURNAL." We regret that transmittal letters not containing the foregoing language signed by "all" authors of the submission will necessitate delay in review of the manuscript.

The NORTH CAROLINA MEDICAL JOURNAL accepts manuscripts prepared and submitted in accordance with uniform requirements defined by the International Steering Committee of Medical Editors as described below.

PREPARATION OF MANUSCRIPT

Type manuscripts on 20.3 x 26.7 cm or 21.6 x 27.9 cm (8 x 10½ in or 8½ x 11 in) or ISO A4 (212 x 297 mm) white bond paper with margins of at least 2.5 cm (1 in). Use double spacing throughout, including title page, abstract, text, acknowledgments, references, tables, and legends for illustrations. Submit three copies of the complete manuscript and three sets of glossy prints of all figures. Begin each of the following sections on separate pages: title page, abstract and key words, text, acknowledgments, references, individual tables, and legends. Number pages consecutively, beginning with the title page. Type the page number in the upper right-hand corner of each page.

Manuscripts are reviewed for possible publication with the understanding that they are being submitted to one journal at a time and have not been published, simultaneously submitted, or already accepted for publication elsewhere. This does not preclude consideration of a manuscript that has been rejected by another journal or of a complete report that follows publication of preliminary findings elsewhere, usually in the form of an abstract. Copies of any possible duplicative published material should be submitted

together with the manuscript that is being sent for consideration.

TITLE PAGE

The title page should contain: (1) the title of the article, which should be concise but informative; (2) a short running head or footline of no more than 40 characters (count letters and spaces) placed at the foot of the title page and identified; (3) first name, middle initial, and last name of each author, with highest academic degree(s); (4) name of department(s) and institution(s) to which the work should be attributed; (5) disclaimers, if any; (6) name and address of author responsible for correspondence about the manuscript; (7) name and address of author to whom requests for reprints should be addressed, or statement that reprints will not be available from the author; (8) the source(s) of support in the form of grants, equipment, or drugs.

ABSTRACT AND KEY WORDS

The second page should carry an abstract of not more than 150 words. State the purposes of the study or investigation, basic procedures (study subjects or experimental animals and observational and analytical methods), main findings (give specific data and their statistical significance, if possible), and the principal conclusions. Emphasize new and important aspects of the study or observations. Use only approved abbreviations (see Appendix for commonly used abbreviations).

Key (indexing) terms—Below the abstract provide and identify as such three to 10 key words or short phrases that will assist indexers in cross-indexing your article and that may be published with the abstract. Use terms from the Medical Subject Headings list from *Index Medicus* whenever possible.

TEXT

The text of observational and experimental articles is usually, but not necessarily, divided into sections with the headings Introduction, Methods, Results, and Discussion. Long articles may need subheadings within some sections to clarify their content, especially the Results and Discussion sections. Other types of articles need not conform to this format, and authors should consult individual journals for further guidance.

Introduction—State clearly the purpose of the article. Summarize the rationale for the study or observation. Give only strictly pertinent references and do not review the subject extensively.

Methods—Describe your selection of the observa-

tional or experimental subjects (patients or experimental animals, including controls) clearly. Identify the methods, apparatus (manufacturer's name and address within parentheses), and procedures used in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods; provide references and brief descriptions of methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate their limitations. When reporting experiments on human or animal subjects, indicate whether the procedures followed were in accord with the ethical standards of the committee of human experimentation of the institution in which the experiments were done or in accordance with the Helsinki Declaration of 1975. Identify precisely all drugs and chemicals used, including generic name(s), dosage(s), and route(s) of administration. Do not use patients' names, initials, or hospital numbers. Include numbers of observations and their statistical significance when appropriate. Detailed statistical analyses, mathematical derivations, and the like may sometimes be suitably presented in the form of one or more appendices.

Results—Present your results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables or illustrations, or both; emphasize or summarize only important observations.

Discussion—Emphasize the new and important aspects of the study and conclusions that follow from them. Do not repeat data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies. Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such.

ACKNOWLEDGMENTS

Acknowledge only persons who have made substantive contributions to the study. Authors are responsible for obtaining written permission to do so because such an acknowledgment may imply endorsement of the data and conclusions.

REFERENCES

Number references consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by arabic numerals (within parentheses). References cited only in tables or in legends to figures should be numbered in accordance with a sequence established by the first identification in the text of the particular table or illustration.

Use the form of references adopted by the United States National Library of Medicine and used in *Index Medicus*. For references not included in *Index Medi-*

cus use the style of the examples cited subsequently; these adhere to the abbreviated form of references established by the American National (ANSI) Standard for Bibliographic References and have been approved by the National Library of Medicine.

The names of journals should be abbreviated according to the style used by *Index Medicus*; consult the "List of Journals Indexed," which is printed each year in the January issue of *Index Medicus*.

Try to avoid the use of abstracts as references; "unpublished observations" and "personal (written, not verbal) communications" may not be used as references, although references to them may be inserted (within parentheses) in the text. Include manuscripts accepted but not yet published among the references as in press; designate the journal followed by "in press" (within parentheses). Cite manuscripts submitted but not yet accepted in the text as "unpublished observations" (within parentheses).

The references must be verified against the original documents. Examples of correct forms of references are given below.

Journal

- (1) *Standard journal article*—(List all authors when six or less; when seven or more, list only first three.)

Solter NA, Wasserman SI, Austen KF: Cold urticaria: Release into the circulation of histamine and eosinophilic chemotactic factor of anaphylaxis during cold challenge. *N Engl J Med* 1976; 294: 687-90.

- (2) *Corporate author*

The Committee on Enzymes of the Scandinavian Society for Clinical Chemistry and Clinical Psychology. Recommended method for the determination of gamma-glutamyltransferase in blood. *Scand J Clin Lab Invest* 1976; 36: 119-25.

Anonymous. Epidemiology for primary health care. *Int J Epidemiol* 1976; 5: 224-5.

Books and other monographs

- (3) *Personal author(s)*

Osler AG: Complement: mechanisms and functions. Englewood Cliffs: Prentice-Hall, 1976.

- (4) *Corporate author*

American Medical Association Department of Drugs. AMA drug evaluations. 3rd ed. Littleton Publishing Sciences Group, 1977.

- (5) *Editor, compiler, chairman as author*

Rhodes AJ, Van Rooyen CE, comps. Textbook of virology: for students and practitioners of medicine and other health sciences. 5th ed. Baltimore: Williams & Wilkins, 1968.

- (6) *Chapter in book*

Weinstein L, Swartz MN: Pathogenetic properties of invading microorganisms. pp. 457-72. In: Sodeman WA Jr, Sodeman WA, eds.

Pathologic physiology: mechanisms of disease. Philadelphia: WB Saunders, 1974.

(7) *Agency publication*

National Center for Health Statistics. Acute conditions, incidence and associated disability, United States July 1968-June 1969, Series 10, No 69, 1972, DHEW Pub No (HSM) 72-1036.

(8) *Newspaper article*

Shaffer RA: Advances in chemistry are starting to unlock mysteries of the brain: Discoveries could help cure alcoholism and insomnia, explain mental illness. The Wall Street Journal 1977 Aug 12: 1 (col. 1), 10 (col. 1).

(9) *Magazine article*

Roneché B: Annals of medicine: The santa claus culture. The New Yorker 1971 Sept 4: 66-81.

TABLES

Type each table on a separate sheet; remember to double-space. Do not submit tables as photographs. Number tables consecutively and supply a brief title for each. Give each column a short or abbreviated heading. Place explanatory matter in footnotes, not in the heading. Explain in footnotes all non-standard abbreviations that are used in each table. For footnotes, use the following symbols in order: *, †, ‡, §, ¶, ||, **, ††, etc. Identify statistical measures of variations such as SD and SEM.

Omit internal horizontal and vertical rules.

Cite each table in the text in consecutive order.

If you use data from another published or unpublished source, obtain permission and acknowledge fully.

A number of tables that is excessive in relation to the length of the text may produce difficulties in the layout of pages. Examine issues of the journal to which you plan to submit your paper to estimate how many tables may be used per 1000 words of text.

On recommendation of the editor after acceptance of a manuscript, additional tables containing important backup data too extensive to be published may be deposited with the National Auxiliary Publications Service or made available by the author(s). In that event an appropriate statement will be added to the text. Submit such tables for consideration with the manuscript.

ILLUSTRATIONS

Submit three complete sets of figures. Figures should be professionally drawn and photographed; freehand or typewritten lettering is unacceptable. Instead of original drawings, roentgenograms, and other material, send sharp, glossy black and white photographic prints no larger than 20.3 x 25.4 cm (8 x 10 in). Letters, numbers, and symbols should be clear and even throughout, and of sufficient size that when reduced for publication each item will still be legible. Titles and detailed explanations belong in the legends for illustrations, not in the illustrations themselves.

Each figure should have a label pasted on its back indicating the number of the figure, the names of the authors, and the top of the figure. Do not write on the back of the figures or mount them on cardboard, or scratch or mar them using paper clips. Do not bend figures.

Photomicrographs must have internal scale markers. Symbols, arrows, or letters used in the photomicrographs should contrast with the background.

If photographs of people are used, either the subjects should not be identifiable or their pictures must be accompanied by written permission to use the photograph.

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Type legends for illustrations double-space on a separate page with arabic numerals corresponding to the illustrations. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain internal scale and identify method of staining in photomicrographs.

ABBREVIATIONS

Use only standard abbreviations (see Appendix). Consult the *Council of Biology Editors Style Manual* (4th edition) and the *ELSE Manual* for lists of additional standard abbreviations. Avoid abbreviations in the title. The full term for which an abbreviation stands should precede its first use in the text unless it is a standard unit of measurement.

In many countries the International System of Units (SI) is standard or is becoming so. Report measurements in the units in which they were made. Journals may use these units, convert them to another system, or use both.

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Mail manuscripts in a heavy paper envelope, enclosing the manuscript and figures in cardboard, if necessary, to prevent bending of photographs during mail handling. Place photographs and transparencies in heavy paper envelopes.

Manuscripts should be accompanied by a covering letter from the author who will be responsible for correspondence regarding the manuscript. The covering letter should contain a statement that the manuscript has been seen and approved by all authors. The

letter should give any additional information that may be helpful to the editor, such as the type of article the manuscript represents in the particular journal; information on publication of any part of the manuscript and whether the author(s) will be willing to meet the cost of reproducing color illustrations. Include copies of any permissions needed to reproduce published material or to use illustrations of identifiable subjects.

Appendix

COMMONLY USED APPROVED ABBREVIATIONS

TABLE 1—Standard units of measurements and statistical terms

Term	Abbreviation or symbol
<i>Standard units of measurement</i>	
ampere	A
Angstrom	Å
barn	b
candela	cd
coulomb	C
counts per minute	cpm or counts/min
counts per second	cps or counts/sec
curie	Ci
degree Celsius	°C
disintegrations per minute	dpm or dis/min
disintegrations per second	dps or dis/sec
electron Volt	eV
equivalent	Eq
farad	F
gauss	G
gram	g
henry	H
hertz	Hz
hour	h or hr
international unit	IU
joule	J
kelvin	K
kilogram	kg
liter, litre	l
meter, metre	m
minute	min
molar	M
mole	mol
newton	N
normal (concentration)	N
ohm	Ω
osmol	osmol
pascal	Pa
revolutions per minute	rpm or r/min
second	s
square centimeter	cm ²
volt	V
watts	W
week	wk
year	yr
<i>Statistical terms</i>	
correlation coefficient	r
degrees of freedom	df
mean	\bar{x}
not significant	NS
number of observations	n

probability	p
standard deviation	SD
standard error of the mean	SEM
"Student's" t test	t test
variance ratio	F

TABLE II—Combining factors

Name and factor	Symbol	Name and factor	Symbol
tera- (10 ¹²)	T	centi- (10 ⁻²)	c
giga- (10 ⁹)	G	milli- (10 ⁻³)	m
mega- (10 ⁶)	M	micro- (10 ⁻⁶)	μ
kilo- (10 ³)	k	nano- (10 ⁻⁹)	n
hecto- (10 ²)	h	pico- (10 ⁻¹²)	p
deca- (10 ¹)	da	femto- (10 ⁻¹⁵)	f
deci- (10 ⁻¹)	d	atto- (10 ⁻¹⁸)	a

TABLE III—Other common abbreviations

Term	Abbreviation or symbol
adenosinediphosphatase	ADPase
adenosine 5'-diphosphate (adenosine diphosphate)	ADP
adenosine 5'-monophosphate (adenosine monophosphate, adenylic acid)	AMP
adenosine triphosphatase	ATPase
adenosine 5'-triphosphate (adenosine triphosphate)	ATP
adrenocorticotrophic hormone (adrenocorticotropin)	ACTH
bacillus Calmette-Guerin	BCG
body temperature, pressure, and saturated	BTPS
basal metabolic rate	BMR
central nervous system	CNS
coenzyme A	coA
deoxyribonucleic acid (deoxyribonucleate)	DNA
dihydroxyphenethylamine	dopamine
electrocardiogram	ECG
electroencephalogram	EEG
enteric cytopathogenic human orphan (virus)	ECHO
ethyl	Et
ethylenediaminetetraacetate	EDTA
gas-liquid chromatography	GLC
guanosine 5'-monophosphate (guanosine monophosphate, guanylic acid)	GMP
haemoglobin	Hb
logarithm (to base 10; common logarithm)	log
logarithm, natural	ln
methyl	Me
Michaelis constant	Km
negative logarithm of hydrogen ion activity	pH
partial pressure of CO ₂	PCO ₂
partial pressure of O ₂	PO ₂
per	/
per cent	%
radiation (ionising, absorbed dose)	rad
respiratory quotient	RQ
specific gravity	sp gr
standard atmosphere	atm
standard temperature and pressure	STP
ultraviolet	uv
volume	vol
volume ratio (volume per volume)	vol/vol
weight	wt
weight per volume	wt/vol
weight ratio (weight per weight)	wt/wt

THE RETURN OF ARCHY

Treadmill is a word in transition. It used to suggest repetition, monotony, the rat race — a chore which could not be avoided or a device for a pet hamster. Now it appears to have acquired a certain dignity because it has entered the medical vocabulary. Unfortunately, before they can speak proudly of taking the treadmill, people must present with cardiac symptoms or have a myocardial infarction. Then the results of the treadmill take on a great significance. The machine for good or ill quantifies and prognosticates. Treadmills are now for men, not mice.

Treadmills are for marsupials, too.¹ Exercise physiologists in Boston and in New South Wales have been studying kangaroo energetics employing the treadmill to help them determine oxygen consumption. The investigators are interested in why and how the kangaroo hops and at what metabolic costs.

The group at the Museum of Comparative Zoology at Harvard University has found that these animals are extremely inefficient walkers but are able to use their tendons as springs to hop. Whereas other terrestrial animals run and increase their oxygen consumption in order to move faster, kangaroos hop and actually decrease oxygen utilization. If they want to move even faster, they use their whole bodies as springs and take longer hops. Since the creatures live in the desert where grass is scarce and rain is scant, they must have learned to hop from patch to patch to survive because they were hungry.

Biologists in Buffalo have found that treadmills are also for cockroaches whose oxygen consumption is directly related to their running velocity.² Apparently the large, wingless tropical cockroach *Gromphadorhina portentosa*, their experimental roach, does not hop, or at least didn't in the Buffalo treadmill. That roaches have become targets for scientific concern must be heartening to them. The most primitive of living winged insects and among the most ancient of fossil insects, cockroaches, after the Permian period, we are informed by the *Encyclopaedia Britannica*, "lost their pre-eminence and gradually declined to their present insignificant status among insects." But things are looking up for them because the *Britannica* further states that "some house pests, such as the Oriental cockroach (*Bletta orientalis*), have become cosmopolitan."

Perhaps their cosmopolitanism is the result of their appeal to biologists, chemists and exercise physiologists. A researcher at Emory University in Atlanta has found that cockroaches aren't much trouble to raise, a prerequisite in seeking an animal to study in these cost conscious times. Their muscle fibers are quite similar to human skeletal muscle so that the effects of different types of exercise on different fiber types can be studied, nerves can be transferred surgically from one type of muscle to another and accommodation and response assessed by letting different species into the treadmill chamber. Oxygen consumption can be measured and performance quantified.

Chemists in Delft in Holland, previously renowned

as the home of the great Dutch painter, Vermeer, and for its porcelain, have found cockroaches susceptible of study, too. They have extracted 200 μg of the pheromone, periplanone B, from 75,000 virgin cockroaches. The chemical structure has been worked out so that we may soon know much more about how female roaches attract males. Male roaches have a chemical weapon, too, in the battle between the sexes — periplanone A, also known as seducin. Perhaps the rhythms of the Spanish dance as exemplified by the familiar La Cucaracha (the cockroach) were dictated subliminally — from roach via pheromone to man, yet another example of cosmopolitanism.

All this would have come as little surprise to Don Marquis, the newspaperman, poet and humorist, who one evening came upon a gigantic cockroach pumping the keys of his typewriter. Here are Marquis's observations:

"He did not see us, and we watched him. He would climb painfully upon the framework of the machine and cast himself with all his force upon a key, head downward, and his weight and the impact of the blow were just sufficient to operate the machine, one slow letter after another. He could not work the capital letters, and he had a great deal of difficulty operating the mechanism that shifts the paper so that a fresh line may be started. We never saw a cockroach work so hard or perspire so freely in all our lives before. After about an hour of this frightful difficult literary labor he fell to the floor exhausted."

archy thereafter always found a blank piece of paper in the typewriter for his nocturnal composition and offered us great insight into the character of roaches and of cats, particularly of his friend Mehitabel, who before her feline nights had in another era existed as Cleopatra. Marquis died in 1937, but not before he collected archy's works for publication, in so doing earning himself a place as pioneer in the field of animal energetics.

J.H.F.

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1. *Wall Street Journal* 1981 June 25.
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DMSO

Characteristic of our democratic society as it now deals with the medical profession are its ardor for regulation of the practitioner of physic and its effort to protect the public from the fruits of medical science. Yet these strictures have not repelled many invaders of our field who seem every year to intensify their efforts to get "a piece of the action." They often lobby very effectively in getting new privileges without clearly demonstrating the public's need or their own qualifications.

Drugs play a critical role in these considerations. Optometrists have vigorously sought and often gained permission to employ potent agents therapeutically. Pharmacists, frustrated because they can't apply their knowledge as effectively as they desire, are quite willing to relieve physicians of some of their patient re-

sponsibilities in prescribing. Others seeking self-knowledge, amusement and recreation and perhaps to save money don't bother with lobbying or literature: they simply treat themselves with a variety of agents, tested or untested.

Take DMSO, dimethyl sulfoxide, once a wonder drug almost guaranteed to grow hair inside and outside door knobs, although its mechanism of action, its effectiveness and its metabolism have not been well worked out. It is back with us, advertised on billboards in southwestern Virginia and offered to Forsyth county residents by at least one neighborhood hardware store. DMSO is apparently of some value for patients with interstitial cystitis but it is unlikely that bladder disease is suddenly epidemic in this part of the world. The compound is a good solvent but can there be that many vicious solutes in the Blue Ridges?

The Food and Drug Administration, hero when it

protects the public, villain when it will not release good drugs for use, has already confiscated one batch of the compound and has accused DMSO Inc. of Buffalo, N.Y., of misbranding the substance and making unwarranted medical claims. Meanwhile, the state of Montana this year exempted it from the state's new drug application requirements so that it can now be made and peddled within the state, human use by prescription only. Washington, Oregon, Louisiana and Florida have enacted similar legislation.

The results of current clinical trials are being awaited with interest. If DMSO does have therapeutic value for conditions other than interstitial cystitis, we need to know about it as soon as possible. Until we do know, we have no business recommending it and have every right to wonder why the sudden burst of advertising.

J.H.F.

PHILIP A. AUSTIN [b. 1819?]

It requires the broadest literary and classical education of boyhood to counteract the necessarily narrowing influence of the professional studies of manhood; and it demands the largest possible infusion of purely scientific teaching, during professional pupilage, to correct the matter-of-fact influence of the practice. . . .

It is by . . . early restriction of thought and action within the narrow grooves of life's future pursuits that a merchant so often loses all power to enjoy the fruit of his toil, a physician is unknown beyond the sick room, a surgeon contributes nothing to the cause of science, and a dentist holds no social position.

The Principles and Practice of Dentistry

From The Desk of The Managing Editor

IMPRESSIONS: A LESSON IN DEMOCRACY

We waited for hours. The committee room pulsed with people's coming and going. Those reporters insecure enough to require front row seats sat while visions of lost deadlines danced in their heads. Lobbyists and other especially interested friends just danced. Staffers, armed with figures and facts, looked frayed. Legislators, while basking in the heat of the spotlight, wanted to rush through the ritual and go home. Republicans and Democrats, observers and participants all intermingled, talking in the present tense.

In another room (another world) the decisions were made (the rites of passage defined).

We knew all was done. What little money there was had been appropriated, however appropriately. Why were we waiting?

Because all was not done. It never is until the ayes and nays are counted, until every comma is in its place. (A typographical error could leave the \$64,000 question unanswered.)

So we waited to ensure (to hope?) that our input remained in; our compromises, promised.

The camera lights blinked, beckoning all to sit in their seats. The gavel pounded, persuading ears and eyes to turn to the podium. The huddled few emerged from the other room. The ritual began.

Order was called, computer print-outs passed out,

and the motions commenced. Recognizing only discussion deemed germane, the Chair conducted the voices with ease. The appropriations bill's special provisions — footnotes, so to speak, allocating (or not) funds to special needs — were treated separately. Questions were asked, answered, called and voted upon as the Chair auctioneered each piece of language. A chosen few paragraphs were destined displaced while a few chosen words were added, deleted, and/or re-arranged. The song of parliamentary procedure rang through the halls giving a semblance of harmony, however noisily.

Twisting and turning, the audience delayed judgment. The power of persuasion was powerless — a faint echo at best; the power of the vote — singing loudly and clearly — had taken its place.

Finally, the finale was played to the beat of the gavel, giving hope to some, disappointment to others (however expected). Reporters cornered names to scribble quotable quotes. Lobbyists and other especially interested friends patted backs and shook hands and heads. Staffers just shook heads. Legislators vainly avoided corners, keeping saliently silent. Having passed through the rites, we all went home to begin the work democracy had just delivered us.

A.A.H.

EDWARD AUGUSTUS HOLYOKE [1728-1829]

As to your Inquiry whether a collegiate Education be necessary, I answer No, but then, I am fully persuaded that at least a moderate Acquaintance with the Latin, and some even slight knowledge of the Greek Language is necessary; and still more that initiation into the Newtonian Philosophy and Chemistry, and in general into that Circle of Science which is taught by the Professor of Natural Philosophy in the Apparratus Chàmber.

Opinion given to the Massachusetts Medical Society

National Institutes of Health

CONSENSUS DEVELOPMENT CONFERENCE STATEMENT CORONARY ARTERY BYPASS SURGERY: SCIENTIFIC AND CLINICAL ASPECTS

A Consensus Development Conference was held at the National Institutes of Health Dec. 3-5, 1980, to consider the status of coronary artery bypass surgery in relation to five specific questions:

1. What is overall management of patients with coronary artery disease — that is, in what context should coronary artery surgery be considered?
 2. What constitutes a reasonable diagnostic workup before recommending medical or surgical therapy?
 3. What is known about long-term survival with coronary artery bypass surgery in specific patient groups?
 4. What is known about long-term quality of life following coronary artery bypass surgery?
 5. What is the range of success rates for the procedure and what factors may be important in influencing the outcome?
1. What is overall management of patients with coronary artery disease — that is, in what context should coronary artery surgery be considered?

Coronary heart disease may be recognized by the physician as the clinical syndromes of angina pectoris, acute myocardial infarction, sudden cardiac arrest or ischemic cardiomyopathy. It may also be recognized in an asymptomatic form by detection of electro-

cardiographic evidence of prior myocardial infarction not recognized during the acute episode or by characteristic abnormalities of the electrocardiogram during exercise testing of apparently healthy persons. Once suspected by the physician, the diagnosis may be confirmed with various levels of certainty by utilization of one or more special diagnostic tests. The tests most commonly used include the electrocardiogram recorded during and after monitored graded exercise, in some institutions radionuclide studies of myocardial perfusion and ventricular function at rest and in response to exercise, and coronary arteriography with left ventricular angiography. In addition to confirming the diagnosis, such studies may provide information as to the pathological anatomy of the coronary arteries, the functional condition of the left ventricle and the overall response of the circulation to stress. These data may be combined with those obtained from the medical history and physical examination and with detailed knowledge of the natural history of the disease derived from many long-term follow-up studies of patients having such testing to form definable subsets of persons with widely different prognoses. Since a fundamental aspect of advanced coronary heart disease is a greatly increased probability of sudden death or myocardial infarction, such prognostic information strongly influences the decision on whether to add coronary artery bypass surgery to the overall lifelong medical management recommended. If the combined data indicate that the patient is at high risk of sudden death or infarction — for example, the patient with severe stenosis of the main trunk of the left coronary artery or severe and proximal stenosis of multiple major coronary branches — especially serious consideration is given for surgery. On the other hand, if the studies indicate that there is no critical stenosis of any major coronary branch, then clearly surgery is not indicated and medical treatment is advised.

But a very large percentage of patients fit between these extremes. In these patients, recommendations for medical or surgical therapy are based upon two fundamental questions. One, often most anxiety provoking to the patient, relates to the perception of the physician and the patient as to which course provides the greatest protection from disabling myocardial infarction or death. The second relates to which course will allow the patient to obtain a satisfactory quality of life according to his own standards. The answers to these questions remain highly judgmental. The answer to the first is heavily based upon the physician's interpretation of a large volume of sometimes contradictory data of extraordinary complexity. The answer to the second is heavily based upon the indi-



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vidual patient's response to medical therapy and to his or her priorities.

It is common practice for the physician and patient, when faced with this problem, to initiate comprehensive medical therapy with periodic reevaluation of the patient's response. It is critically important to recognize that appropriate, comprehensive medical care of the patient with coronary heart disease requires an intensive effort on the part of the physician, involving consideration of almost every aspect of the patient's life. It requires careful education of the patient and spouse on the nature of the disease and its management so as to allow adequate continuing self-care and to allow patients to participate knowledgeably in major decisions affecting their lives. It requires optimal control of risk factors for atherosclerosis and modification of lifestyle appropriate for the illness. This may affect both work and leisure. It may require long-term administration of nitroglycerin, beta-adrenergic blocking drugs, long-acting nitrates, antiar-

rhythmic agents and digitalis, among other agents. Effective and safe utilization of these drugs requires careful titration of dosage in relation to signs and symptoms. If, after such careful and intensive medical treatment, the patient believes that the quality of life is so adversely affected that other alternatives must be sought, surgical therapy may be advised for suitable patients. It must also be recognized that in many cases dissatisfaction with the altered lifestyle imposed by the illness is the result of inadequate attention to the details of management; failure of the physician to educate the patient concerning appropriate use of medications may be a particularly important cause of such difficulty.

In patients with chronic stable angina and good ventricular performance, aorto-coronary revascularization of the heart, whether with autologous vein or artery, has had a progressive decline in operative mortality to levels as low as 1% to 2% at major surgical centers. A corresponding decrease in perioperative

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myocardial infarction has been achieved. These results are assumed to relate to better management of anesthesia, more complete myocardial revascularization and improved methods for protecting the heart during coronary grafting. There seems to be no doubt that coronary bypass surgery can improve myocardial perfusion. Patency of aorto-coronary saphenous vein grafts has been in the range of 80% to 85% two years after operation. The procedure has been widely accepted as treatment in patients with unacceptable symptoms on medical therapy and in certain other subsets of patients with coronary artery disease.

2. What constitutes a reasonable diagnostic workup before recommending medical or surgical therapy?

A reasonable diagnostic workup of a patient with angina pectoris depends upon the clinical problem at issue. Instability and severity of angina, effect of disease on the quality of life, cardiac function and, to a certain degree, age play a role in determining the workup of each patient. The workup should be done as efficiently as possible to provide definite information. Unnecessary and redundant procedures should be avoided.

In some patients definition of the coronary anatomy is needed to determine operability. There is consensus that patients with stable angina whose quality of life is significantly impaired by their symptoms should undergo coronary arteriography. Further, in patients with unstable angina, coronary arteriography should be performed during the initial phase of hospitaliza-

tion; if maximal medical therapy does not relieve symptoms, this procedure should be done promptly. There is consensus that coronary artery bypass graft surgery is indicated in patients with unacceptable symptoms on appropriate medical treatment or with recurrent unstable angina, but the decision to operate must also depend on results of invasive studies.

In patients with typical angina not sufficiently severe to dictate surgery for relief of symptoms, noninvasive testing may be carried out initially in the attempt to identify those at high risk. However, there is lack of consensus on the value of noninvasive testing in the workup of such patients. Some physicians prefer coronary arteriography as the initial diagnostic procedure, particularly in the young patient. Others recommend exercise electrocardiography in an attempt to identify patients with significant left main or triple-vessel disease. Such patients will often show early and/or excessive ST segment deviations, ST segment depression prolonged into the recovery period, or decrease in blood pressure during the test. In these patients, coronary arteriography should be carried out and, if high-risk disease is found, coronary artery bypass surgery considered. The use of radionuclide studies to identify high-risk patients with left main and/or triple-vessel coronary disease needs further evaluation.

There is lack of consensus on the approach to evaluation of patients with questionable or atypical angina. In such patients exercise electrocardiography may help identify those with significant coronary disease; such identification may be enhanced by radionuclide studies in conjunction with exercise testing, particularly in patients with resting electrocardiographic abnormalities which impair the interpretation of the exercise electrocardiogram. The presence of coronary artery disease may be indicated by transient myocardial perfusion defects, wall motion abnormalities or an abnormal response of the left ventricular ejection fraction to exercise. Further research is needed to determine the role of noninvasive testing in patients with, or suspected of having, coronary artery disease.

Survivors of an acute myocardial infarction are at high risk of sudden death during the first year after the event. Recent studies have demonstrated one-year mortality ranging from 10% to 15% of all survivors. Several investigators have reported that these patients can be divided into high- and low-risk subgroups on the basis of clinical information and the results of such noninvasive testing as exercise electrocardiography, radionuclide studies of ventricular function, and ambulatory 24-hour electrocardiographic recording. Many believe that high-risk patients should undergo coronary arteriography and left ventricular angiography followed by surgery if coronary anatomy and left ventricular function are appropriate. It should be recognized, however, that the course of these patients undergoing surgery may differ from that of patients with stable or unstable angina and apparently similar coronary anatomy and ventricular function, in that

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they may exhibit a greater tendency for major ventricular arrhythmia. It is also recognized that there are as yet insufficient data to determine whether surgery will reduce the mortality of this subset of patients with coronary heart disease. Because of the relatively large number of patients included in this subset, and the present uncertainty as to the proper course of management, an urgent need exists for further investigation.

The problem of the patient with coronary disease presenting with congestive heart failure needs special consideration. It is important to determine whether a lesion amenable to surgery is contributing significantly to the heart failure, e.g., a ventricular aneurysm, severe mitral incompetence and/or a post-myocardial infarction ventricular septal defect. Two-dimensional echocardiography or radionuclide ventriculography may be noninvasive techniques of help in the evaluation of such patients.

3. What is known about long-term survival with coronary artery bypass surgery in specific patient groups?

The impact of coronary artery bypass graft surgery on survival has been the focus of extensive debate since its introduction. The severity of left ventricular dysfunction has been found to have an adverse effect on survival, and when surgical and medical therapy are compared this must be taken into account as well as the anatomic location and extent of disease defined by coronary arteriography.

It is well recognized that the interpretation of the results of surgical series by comparison with historical controls is difficult. It is especially hazardous in the assessment of coronary artery surgery because of marked changes between early and recent results, both for surgically treated and for medically treated patients. Several recently published series with long-term follow-up of patients undergoing coronary

In 1977, when the Veterans Administration compared Step-2 regimens in 450 mild hypertensive patients, which regimen was proven most effective?



artery bypass surgery have reported an impressively low operative mortality with remarkable long-term survival. At the same time, other studies have noted a marked improvement in recent years in the survival of medically treated patients. Accordingly, it seems unlikely that convincing evidence of the benefits of surgery in appropriately defined subgroups can be effectively assessed from other than adequately controlled studies.

There is consensus that coronary artery bypass surgery in patients with angina pectoris and greater than 50% narrowing of the luminal diameter of the left main coronary artery results in improved survival when compared with results in medically treated patients regardless of left ventricular function or degree of angina pectoris. (Survival rates with medical and surgical therapy were 60% and 89%, respectively, at four years in the V.A. trial, and 67% and 89% at five

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1. Ginsburg CM, McCracken GH Jr, Zweighaft TC, Clahsen JC: Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother* 19:1086-1088 (June) 1981.

2. Multicenter trials. Data to be published.

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3. Data on file. Wyeth Laboratories.
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Branchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)

Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*

Acute exacerbation of chronic bronchitis caused by *H. influenzae**

*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings Cyclacillin should only be prescribed for the indications listed herein.

Cyclacillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclacillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclacillin is given to a nursing woman.

Adverse Reactions Oral cyclacillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclacillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See WARNINGS) Other less frequent adverse reactions which may occur and are reported with other penicillins are anemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclacillin is not indicated in children under 2 months of age.

Patients with Renal Failure Cyclacillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see DOSAGE AND ADMINISTRATION in package insert).

Dosage (Give in equally spaced doses)

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Branchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults.

†depending on severity

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years in the European trial. Left main coronary artery stenosis of this severity is reported in approximately 10% of patients undergoing coronary arteriography.*)

There are few prospective randomized trials with medically treated controls to assess the impact of surgery on survival. Furthermore, the application of such results to the overall population with symptomatic coronary artery disease, treated in many centers, must be done with caution. This compounds the problem of judging the effects of coronary artery bypass surgery on survival in patients with three-vessel disease because of conflicting data. (Three-vessel coronary artery disease of surgical significance is reported in 30% to 40% of angiographic studies.*) The V.A. Cooperative Randomized Trial was reviewed. The initial report failed to demonstrate improved survival with surgery in patients with three-vessel disease, the majority of whom had moderate impairment of left ventricular function. However, if one accepts the analysis of the V.A. data for the 10 hospitals (which include 87% of the patients) in which the average operative mortality was 3.4% and eliminates the three outliers in which the average operative mortality was 23%, a significantly improved survival with surgery is observed. There is also evidence which suggests improved survival in patients with three-vessel disease and moderate impairment of global left ventricular function, i.e., left ventricular ejection fraction in the range of 25% to 50%.

Data were reviewed that suggested improved survival after coronary artery bypass grafting in patients with three-vessel disease and good left ventricular function defined as left ventricular ejection fraction greater than 50%. The European Collaborative Randomized Trial demonstrates improved survival for surgically treated patients in this subset. Though the differences observed in European trial are impressive (survival rate at 60 months was 82% for the medical group and 94% for the surgical group), there is consensus that confirmation of these findings is needed before a firm conclusion can be reached on the question of improved survival in patients with three-vessel disease and good left ventricular function as defined. Other smaller randomized trials and observational studies have yielded conflicting results in this subset.

The two large randomized studies examined do not provide evidence for improved survival with surgery of patients with two-vessel disease regardless of the status of the left ventricle, while some studies have suggested improvement in survival with surgery of patients with two-vessel disease and moderate impairment of left ventricular function. There is no current evidence to support improved after surgery in patients with single-vessel disease regardless of left ventricular functional status.

We do not find data adequate to substantiate improved survival with surgery in patients with severe

degrees of left ventricular functional impairment, i.e., left ventricular ejection fraction less than 20%.

Review of the National Heart, Lung, and Blood Institute Multicenter Randomized Unstable Angina Pectoris Trial, which excluded patients with left main coronary artery disease or persistent unstable angina, has failed to show improved survival of those treated by urgent surgery compared to those treated exclusively by medical management unless surgery was dictated by chronic symptomatology. The extent to which results in this highly selected group of patients can be extrapolated to other subsets of unstable angina patients is not established.

It is important to re-emphasize that surgery may still be appropriate in patient subsets where evidence of improved survival with surgery is lacking if symptoms of myocardial ischemia are sufficiently severe or if large areas of myocardium are in jeopardy. Further attempts should be encouraged at identifying other variables which may affect survival and thus provide methods for more critical testing of therapeutic effectiveness.

4. What is known about the long-term quality of life following coronary artery bypass surgery?

There are few objective criteria by which quality of life can be assessed following coronary artery bypass surgery. The symptoms of angina pectoris is reported to be relieved to 80% to 90% of patients undergoing operation for chronic stable angina. Bypass surgery has reduced the subsequent number of cardiac-related events, amount of medication required and frequency of hospitalizations. Most postoperative patients have been able to increase their exercise capacity and improve their New York Heart Association functional class. This has been documented by improvements in functional exercise testing, angina threshold, left ventricular wall motion, left ventricular ejection fraction during exercise, indices of myocardial oxygen consumption during exercise and greater lactate extraction across the myocardium.

Improvements in symptoms and functional capacity associated with coronary bypass surgery should theoretically result in more individuals returning to gainful employment. The consensus is that this has not occurred. It is recognized that physicians do not make consistent recommendations to patients regarding exercise potential and employability after successful coronary bypass surgery. Factors extraneous to the patient-physician relationship such as preoperative work status, availability of nonwork income, perception of health, age, level of education, and employer attitudes all appear to influence the postoperative employment status. Whether the patient returns to work after coronary bypass surgery depends on too many nonmedical factors to allow any conclusions regarding efficacy of therapy based on return to work.

It is reported that angina will recur or progress after bypass surgery in about 5% of patients per year. In approximately two-thirds of these patients, symptoms are related to closure of the vein graft or progression of

*Estimates of prevalence of lesions found on coronary angiography have a significant dependence on the criteria for angiography; thus considerable variability may exist among individual institutions.

disease. This may be related to persistent elevation of blood lipids or poor control of other risk factors. The entire question of mechanisms involved in progression of atherosclerosis in the coronary circulation and in grafts is important and requires further investigation.

Similar results regarding quality of life have been observed in patients undergoing coronary bypass surgery for unstable angina, but follow-up data are of shorter duration than those cited, which are based predominantly upon patients with stable angina.

5. What is the range of success rates for the procedure and what factors may be important in influencing the outcome?

Where bypass surgery is performed may significantly influence the rate of success of the operation. Excellence can be achieved in a variety of hospitals provided appropriate medical and technical support is available to complement an experienced and skilled surgical team. This would include expertly performed angiography, the availability of other subspecialty resources and appropriate laboratory and blood banking facility.

Successful intraoperative management, reflected in low rates of mortality, perioperative infarction and other postoperative complications, and short hospital convalescence will depend not only upon surgical skill and judgment, but also upon the availability of com-

petent anesthesiologists, efficient extracorporeal support, optimal myocardial preservation techniques and minimal duration of myocardial ischemia consistent with optimal revascularization.

Postoperative management requires a suitable intensive care facility, dedicated personnel and the availability of circulatory support systems.

From experience to date, the following can be expected:

- In patients with chronic stable angina pectoris and normal or moderately impaired left ventricular function, a hospital mortality rate of 4% is generally attainable, and a rate of less than 1% is possible. The incidence of electrocardiographically documented perioperative infarction might approximate 5%.
- In the syndrome of unstable angina pectoris, early results will depend upon the institution's approach to management. A somewhat higher incidence of morbidity and mortality may result from earlier operative intervention compared to lesser risks after a longer period of stabilization and exclusion of patients with evolving infarctions. With initial stabilization and nonemergency operation, hospital mortality and perioperative infarction rates should approach those for patients with chronic stable angina pectoris. Even with early intervention, a hospital mortality of 6% is generally attainable, and perioperative infarction might approximate 10%.

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- The existence of left main coronary artery involvement has been associated with high operative risks in the past. Currently, and except in emergencies, individuals with this lesion can be operated upon with the expectation of morbidity and mortality rates only slightly higher than for those with chronic stable angina with other coronary arterial findings.
- Bypass grafting in patients with severe left ventricular dysfunction has been associated with high operative morbidity and mortality. Recent improvements in perioperative management have lessened the risks. In patients with very severe myocardial dysfunction — that is, ejection fractions of less than 25% — a hospital mortality rate no greater than 15% to 20% is generally achievable.
- At this time there is insufficient information to identify the role of bypass surgery in patients with acute myocardial infarction, or intractable ventricular arrhythmias or in asymptomatic patients in myocardial jeopardy.

For all categories of patients, average one-year graft patency of 85% to 90% should be achievable. The roles of anticoagulant and antiplatelet therapy, and other measures which may affect late graft patency

and retard arteriosclerosis are unknown and require further study.

CONCLUSION

It is the consensus of the panel that coronary artery bypass surgery represents a major advance in the treatment of patients with coronary arterial disease. Evidence has been presented to support the conclusion that improvement in the quality of life, decreased myocardial ischemia, and increased survival in selected subsets of patients have resulted following coronary artery bypass surgery.

This Consensus Conference on *Coronary Artery Bypass Surgery: Scientific and Clinical Aspects* was sponsored by the National Heart, Lung, and Blood Institute in conjunction with the National Center for Health Care Technology and with the assistance of the Office for Medical Applications of Research, Office of the Director, NIH. The Consensus Development Panel consisted of: Robert L. Frye, M.D. (Chairman), Mayo Clinic; W. Gerald Austen, M.D., Massachusetts General Hospital; Paul A. Ebert, M.D., University of California, San Francisco; Charles K. Francis, Jr., M.D., Yale University School of Medicine; Nicholas T. Kouchoukos, M.D., University of Alabama in Birmingham; Paul Meier, Ph.D., University of Chicago; Hiltrud S. Mueller, M.D., St. Louis University School of Medicine; Elliot Rapaport, M.D., University of California, San Francisco; T. Joseph Reeves, M.D., St. Elizabeth's Hospital, Beaumont, Texas; David C. Sabiston, Jr., M.D., Duke University Medical Center; William C. Sheldon, M.D., Cleveland Clinic Foundation; Robert L. Vitu, M.D., Michigan State University; James H. Ware, Ph.D., Harvard School of Public Health.

Special participants in the discussions of the panel included: Samuel Gorovitz, Ph.D., University of Maryland; David C. Levin, M.D., Harvard Medical School; William B. Stason, M.D., Harvard School of Public Health.

Copies of this consensus statement may be obtained from the Office for Medical Applications of Research, National Institutes of Health, Building 1, Room 216, Bethesda, Md. 20205.

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WHAT? WHEN? WHERE? In Continuing Education

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME programs sponsored or cosponsored by these schools automatically qualify for AMA Category I credit toward the AMA's Physician Recognition Award, and for North Carolina Medical Society Category A credit. Where AAFP credit has been requested or obtained, this also is indicated. 2. The "place" and "sponsor" are indicated

for a program only when these differ from the place and source to write "for information."

January 13

"Laboratory Diagnosis of Endocrine Diseases"

Place: Pitt County Memorial Auditorium, Greenville

Fee: \$50

Credit: 7 hours, AAFP applied for

For Information: F. M. Simmons Patterson, M.D., Assistant Dean
for Continuing Medical Education, East Carolina University
School of Medicine, Greenville, N.C. 27834

January 20

"Physician Health and Effectiveness — The Impaired Physician"

Place: Central Carolina Hospital

Fee: \$12

Credit: 2 hours

For Information: Robert S. Cline, M.D., 1135 Carthage Street,
Sanford, N.C. 27330, 919-774-4100, ext. 394

January 22-23

"Clinical Urology"

Place: Bowman Gray School of Medicine

Fee: \$100

Credit: 3 hours

For Information: Emery C. Miller, M.D., Assoc. Dean for Con-
tinuing Education, Bowman Gray School of Medicine, 300 S.
Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

January 23

"Third Annual Pulmonary Disease Update: A Breath of Spring"
Place: Pitt County Memorial Hospital Auditorium, Greenville,
N.C.

Fee: \$50

Credit: 6 hours, AAFP applied for

For Information: F. M. Simmons Patterson, M.D., Assistant Dean
for Continuing Medical Education, East Carolina University
School of Medicine, Greenville, N.C. 27834

February 10

"Clinical Psychiatry Update 1982"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$25

Credit: 3 hours, AAFP applied for

For Information: F. M. Simmons Patterson, M.D., Assistant Dean
for Continuing Medical Education, East Carolina University
School of Medicine, Greenville, N.C. 27834

March 3-5

"Techniques in G.I. Radiology"

Place: Bowman Gray School of Medicine

Credit: 18 hours

For Information: Emery C. Miller, M.D., Associate Dean for Con-
tinuing Education, Bowman Gray School of Medicine, 300 S.
Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

In 1979, when results were published
for the five-year, 10,000-patient
Hypertension Detection and
Follow-up Program (HDFP study),
which Step-2 regimen was preferred
and was deemed effective
without significant adverse effects?²



March 10
"Current Clinical Problems in Family Practice"
Place: Pitt County Memorial Hospital Auditorium, Greenville
Fee: \$50
Credit: 7 hours, AAFP applied for
For Information: F. M. Simmons Patterson, M.D., Assistant Dean
for Continuing Medical Education, East Carolina University
School of Medicine, Greenville, N.C. 27834

March 28-29
"Advanced Life Support Provider"
Place: Bowman Gray School of Medicine
Fee: \$175
Credit: 12 hours
For Information: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

April 2-3
"Frank R. Lock Symposium in Obstetrics & Gynecology"
Place: Bowman Gray School of Medicine
Fee: \$150
Credit: 10 hours, AAFP applied for
For Information: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

April 14
"Infectious Diseases Update 1982"
Place: Pitt County Memorial Hospital, Auditorium, Greenville
Fee: \$50
Credit: 6 hours, AAFP applied for
For Information: F. M. Simmons Patterson, M.D., Assistant Dean
for Continuing Medical Education, East Carolina University
School of Medicine, Greenville, N.C. 27834

April 19-22
"Current Concepts in Diagnostic Imaging"
Place: Duke University Medical Center
Fee: \$400 (\$200 if in training)
Credit: 30 hours
For Information: Donald R. Kirks, M.D., Program Director, Department of Radiology — Box 3834, Duke University Medical Center, Durham, N.C. 27710

April 23-24
"Practical Pediatrics"
Place: Bowman Gray School of Medicine
Fee: \$50
Credit: 9 hours, AAFP applied for
For Information: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

April 24-25
"7th Annual Radiology Update"
Place: Bowman Gray School of Medicine
Fee: \$75
Credit: 9 hours
For Information: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

OUT OF STATE — SOUTHEASTERN REGION

January 13-15
"Defined Diets and Childhood Hyperactivity"
Place: National Institutes of Health, Bethesda, Maryland
For Information: Dorothy D. Sogn, M.D., National Institute of Allergy and Infectious Diseases, Building 31, Room 7A-50, Bethesda, Md., 20205, 301-496-1886

January 22-23
"S.C. Chapter of A.C.S. — Annual Surgical Symposium"
Place: Charleston, South Carolina
For Information: Robert S. Cathcart, III, M.D., 158 Rutledge Ave., Charleston, S.C. 29403, 803-723-6426

January 28-30
"Newer Management & Treatment Techniques in Cardiac Diseases for the Practicing Cardiologist & Physician"
Place: New Orleans, Louisiana
For Information: Registration Secretary, Extramural Programs Department, American College of Cardiology, 9111 Old Georgetown Road, Bethesda, Md. 20014

February 11-13
"Perspectives on New Diagnostic and Therapeutic Techniques in Clinical Cardiology"
Place: Lake Buena Vista, Florida
For Information: Registration Secretary, Extramural Programs Department, American College of Cardiology, 9111 Old Georgetown Road, Bethesda, Md. 20014

March 22-April 2
"Clinical Cytopathology for Pathologists"
Place: The Johns Hopkins Hospital, Baltimore, Maryland
Credit: 125 hours
For Information: (Deadline January 27) John K. Frost, M.D., 610 Pathology Building, The Johns Hopkins Hospital, Baltimore, Md. 21205

March 31-April 2
"Current Concepts of Clinical Infectious Diseases"
Place: Charlottesville, Virginia
For Information: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104, 800-523-1546

April 22-24
"Pediatric Springfest"
Place: Williamsburg, Virginia
For Information: Kathy E. Johnson, Box 48, MCV Station, Richmond, VA, 23298, 804-786-0494

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh, by the 1st of the month prior to the month in which they are to appear. A "Request for listing" form is available upon request.

AUXILIARY TO THE NORTH CAROLINA MEDICAL SOCIETY

WHO IS VOLUNTEERING AND WHY ARE THEY DOING IT?

The North Carolina Medical Society Auxiliary depends on volunteers for its existence. Membership is open to all spouses of physicians, but not all join. If leadership is ineffective, the auxiliary may lose members who were once supportive and active.

The immediacy of this was vividly demonstrated to the participants at the Auxiliary Fall Workshop held in Southern Pines September 21, 1981. Tom Connelly, Ed.D., Dean of the School of Nursing and Health Services at Western Carolina University, led a three-hour volunteer training seminar. In light of the impending federal cutbacks in human service funding, Dr. Connelly's message was particularly timely for all health professionals as well as the volunteer sector. With his permission, I base my column this month on the content of his presentation.

Who are volunteers? Twenty-four percent of all Americans participate in voluntary activities according to the latest census data. Fifty percent of the volunteers are between the ages of 25 and 44; 57% are women.

What do volunteers do? Volunteer effort is currently declining in institutional service (churches, schools, hospitals) and increasing in neighborhood crisis-oriented programs (hospice, battered women shel-

ter). However, 50% of all such effort is still in religious activities, with education and hospital service tied for second place at 15% each. Other areas of service are youth, recreation, social and/or welfare, civic and community, professional organizations and social clubs.

There are three main volunteer activities — executive and policy making (boards of directors); administrative (fund raising, project management); and direct service (addressing envelopes, serving people directly). Volunteers tend to be project-oriented and rarely will engage in routine activity. The one exception is religious work which brings forth long-term, continuing commitment from participants. Seventy-five percent of volunteers will do less than 10 hours of service per month and less than half will volunteer once a week.

Social forces influence volunteer trends. Today's economic conditions are forcing many households to

become two-career families as the wife goes to work even when the husband is well paid as with physicians and other professionals. The employment options for women as well as the emphasis on leisure time activities for self and family may have a profound affect on volunteerism.

Why do people volunteer? All people have needs beyond those of basic survival. Those who volunteer do so to satisfy some inner need. Perhaps it is a social need — to meet people or get involved in the community. Or it may be a need to achieve — to use their talents or learn new skills. For some it may be a financial need — to “make contacts” that will increase current earnings or provide employment opportunities.

A volunteer will also have expectations concerning the activity. If one wants to work directly with people and is assigned to do filing, the volunteer may not return. An effective leader will make an effort to blend

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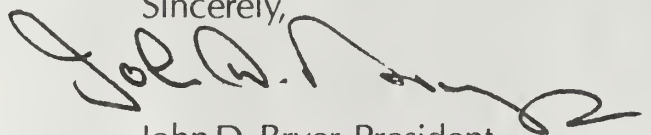
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INDICATIONS AND USAGE: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in the long-term management of these diseases. Safety and effectiveness have not been established for Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain.

CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory drugs (see **WARNINGS**).

WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see **CONTRAINDICATIONS**). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration and gastrointestinal bleeding can end fatally; however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease and only after consulting the **ADVERSE REACTIONS**.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy, this therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: Coumarin-type anticoagulants. The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin. Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS

Incidence greater than 1%

Gastrointestinal: The most frequent adverse reaction is gastrointestinal (4% to 16%). Includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). **Central Nervous System:** dizziness*, headache, nervousness. **Dermatologic:** rash* (including maculopapular type), pruritus. **Special Senses:** tinnitus. **Metabolic:** decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see **PRECAUTIONS**).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** depression, insomnia. **Dermatologic:** vesiculobullous eruptions, urticaria, erythema multiforme. **Special Senses:** amblyopia (see **PRECAUTIONS**). **Hematologic:** leukopenia, decreased hemoglobin, and hematocrit. **Cardiovascular:** congestive heart failure in patients with marginal cardiac function, elevated blood pressure.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** paresthesias, hallucinations, dream abnormalities. **Dermatologic:** alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** gynecostasia, hypoglycemia. **Cardiovascular:** arrhythmias (Sinus tachycardia, bradycardia, and palpitations). **Renal:** decreased creatinine clearance, polyuria, azotemia.

OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine; alkaline diuresis may benefit.

DOSAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d.

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain. Do not exceed 2,400 mg per day.

CAUTION: Federal law prohibits dispensing without prescription.

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the organization's needs with the expectations, needs and goals of the volunteer.

What is the challenge to the auxiliary? Voluntary organizations are "buying peoples' time for nothing." Leaders of these groups must provide motivation and rewards for people to volunteer. Dr. Connelly presented ten suggestions for organizational success:

1. Encourage problem solving
2. Base authority on competence rather than position
3. Facilitate trust and collaboration among members
4. Reward members for personal development as well as productivity
5. Foster a sense of ownership and involvement among members
6. Structure jobs for maximum self-management
7. Conduct work efficiently
8. Help members improve their abilities to cope with conflict
9. Adapt quickly to change
10. Generate high enthusiasm among members

Dr. Connelly's presentation reinforced the belief that volunteerism is important and worthwhile. In particular, auxiliary service has yielded results over the years that have been worthy of pride both in and outside the medical community. To those who are

active participants, carry on. To those who are not, come join us!

ANITA D. TAYLOR, Winston-Salem, N.C.

News Notes from the UNIVERSITY OF N.C.-CHAPEL HILL SCHOOL OF MEDICINE & MEMORIAL HOSPITAL

Two faculty members of the University of North Carolina at Chapel Hill School of Medicine were elected members of the National Academy of Sciences' Institute of Medicine.

Dr. Mary Ellen Jones, Kenan professor and chairman of the Department of Biochemistry and Nutrition, and Dr. Raymond P. White Jr., professor of oral surgery and associate dean of the medical school, were among 50 new members of the institute, bringing its total active membership to 371.

Jones, a distinguished biochemist, is a specialist in metabolism and its regulation. In 1955 she and Drs. Leonard Spector and Fritz Lipmann, both of Rockefeller University in New York, discovered carbamyl phosphate, a compound essential to all living cells.

She is the first woman to hold a Kenan professor-

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ship at UNC-CH and the first to chair a department in the School of Medicine.

White, who serves as an associate chief of staff at North Carolina Memorial Hospital, was dean of the School of Dentistry from 1974 until August of this year. During his tenure the school continued to be recognized as one of the leading institutions of its kind in the nation. In 1980 it received one of the highest evaluations ever given by the American Dental Association's Committee on Dental Accreditation.

He has been active in national scientific organizations and was the American Society of Oral Surgeons' Committeeman of the Year in 1976. White also has been a prolific researcher and author.

Clinical studies to test the effectiveness of a new synthetic growth hormone began Oct. 20 at the School of Medicine of the University of North Carolina at Chapel Hill.

The medical school is one of 10 medical facilities throughout the country selected to test the synthetic hormone produced by Genentech Inc.

The hormone will be tested on two children suffering from hypopituitary dwarfism, a growth deficiency caused by an absence of the growth hormone normally produced in the pituitary gland. The two patients at UNC-CH are among some 20 involved in the second phase of clinical trials required by the U.S. Food and Drug Administration.

Dr. Louis E. Underwood professor of pediatrics is co-investigator of the study at Chapel Hill along with Dr. Judson J. Van Wyk, professor and chief of the division of pediatric endocrinology.

Dr. Eugene S. Sandler, associate professor of dental ecology and pedodontics, has been appointed director of the dental clinic at North Carolina Memorial Hospital and director of the hospital's dental general practice residency program.

The appointment, effective Sept. 15, was announced by Dr. Raymond P. White Jr., chief of hospital dentistry at N.C. Memorial and Dr. Donald Warren, Chairman of the Dental Ecology Department.

Sandler has been director of dental services at the Orange County Health Department since 1979. He will continue to hold this position in addition to his new duties.

A native of Massachusetts, Sandler received his D.D.S. from New York University in 1958 and his M.Sc.D. and a certificate of advanced graduate studies in pedodontics from the Boston School of Graduate Dentistry in 1966. His major research interests are treatment of exceptional children and community and preventive dentistry.

Sandler has been an associate professor at the UNC-CH School of Dentistry since 1979. He serves as a consultant in dentistry for North Carolina Headstart programs and project director of the Robert Wood Johnson Ambulatory Care Program which has set up

two dental clinics in cooperation with the Orange County Health Department.

A relatively recent development in basic medical research, the fluorescence photobleaching technique, was the topic of an international workshop Oct. 25-29 at the University of North Carolina at Chapel Hill.

"The UNC Department of Anatomy and laboratories for cell biology have adopted a plan to host an international workshop in some area of contemporary biology each academic year," said Dr. Charles R. Hackenbrock, chairman of anatomy and director of the department's laboratories for cell biology.

The first departmental workshop, which has been organized by Dr. Kenneth A. Jacobson, associate professor of anatomy, will bring together people, for the first time, who have been working on the photobleaching technique to share the results and the interpretation of their research.

The approximately 60 participants have been drawn from Canada, Europe, Israel and the United States, with an additional 10-15 from the University.

Funding for the workshop has been provided by the UNC-CH School of Medicine, Burroughs Wellcome Co., the National Science Foundation and the U.S. Army Research Office.

Joyce L. Mackinnon has been promoted to assistant professor in the School of Medicine's department of medical allied health professions effective Oct. 1.

The appointments of four assistant professors in the School of Medicine have been announced by Chancellor Christopher C. Fordham III.

Dr. Robert E. Jay and Theodore I. King II were appointed assistant professors of medical allied health professions effective Aug. 1. Dr. David Siscovick was appointed assistant professor of medicine effective Sept. 1 and Dr. Edward Teeple Jr. was appointed assistant professor of anesthesiology effective July 1.

Jay was an assistant professor at the University of Tulsa for five years before coming to UNC-CH. Previously he was a speech clinician and then a speech pathologist and special education team leader at the University of Northern Colorado.

An Indiana native, Jay earned his B.A. in 1969 from the University of Colorado, his M.S. in 1971 from East New Mexico University and his Ph.D. in 1977 from Vanderbilt University.

King was an instructor at the University of Wisconsin at Madison for a year before joining the faculty. Previously he was senior staff therapist at University Hospital of the University of Michigan, and he has worked as an occupational therapist and a biology teacher in Michigan public schools.

A Michigan native, he earned his B.S. in 1970 from Michigan State University, his M.O.T. in 1978 from

Western Michigan University and his Ph.D. in 1980 from Michigan State.

Siscovick was a fellow at the University of Washington for the last two years, and previously he served his internship and residency there.

A Maryland native, he earned his B.A. in 1971 from the University of Pennsylvania and his M.D. in 1976 from the University of Maryland.

Teeple has been a fellow in anesthesiology at UNC-CH since last year, having previously served his internship at Overlook Hospital in Summit, N.J., and his residency at Jackson Memorial Hospital in Miami, Fla.

A New Jersey native, he earned his B.S. in 1973 from Rutgers University and his M.D. in 1977 from the New Jersey College of Medicine.

Some 50 postdoctoral fellows and core faculty members of the Cancer Research Center participated in the Sixth Annual Postdoc-Faculty Research Days at the Quail Roost Conference Center in Rougemont Oct. 1 and 2.

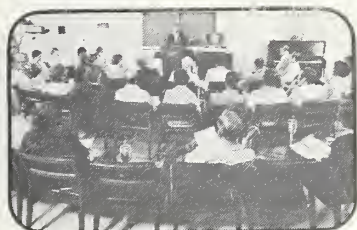
Guest speaker was Dr. Barney C. Lepovetsky, chief

of the manpower branch of the National Cancer Institute. Faculty members who presented talks included: Dr. Clyde Hutchinson III, professor of bacteriology and immunology; Dr. Steven Bachenheimer, associate professor of bacteriology and immunology; Dr. Jack Griffith, associate professor of bacteriology and immunology; Dr. David Klapper, assistant professor of bacteriology and immunology; Dr. Stephen Haskill, associate professor of obstetrics and gynecology and bacteriology and immunology; Dr. Philip Carl, research associate professor of pharmacology; Dr. David Kaufman, professor of pathology; Dr. Keith Burrige, assistant professor of anatomy; and Dr. Avram Gold, assistant professor of environmental sciences and engineering.

Cancer center trainees reporting on their work were: Drs. Jerry Ruth, David Toorchen, Jill Siegfried, Berch Henry II, John Sixby, Nancy Olashaw, Barbara Chou, S. Keith Chapes, John Patton, Myron Toews, Richard Rubin, Michelle Davis and research associate Dr. Alok Datta.

Dr. John Newbold, associate professor of bacteriology and immunology, organized the annual conference, sponsored by a National Research Ser-

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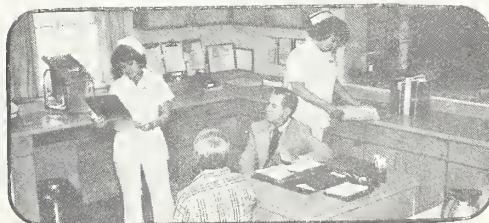
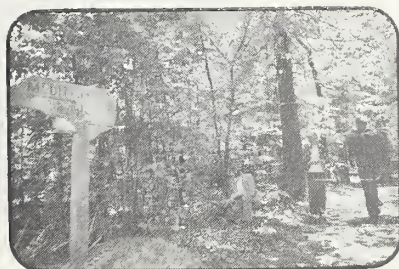


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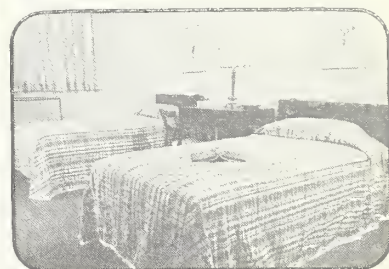
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vice Award training program and administered by the Cancer Research Center. The training program, now entering its seventh year of funding by the National Cancer Institute, has supported the research, training 39 postdoctoral fellows in laboratories throughout the medical school.

Marlys Mitchell, associate professor and director of occupational therapy, participated in an American Occupational Therapy Association conference program advisory committee meeting June 8-10 in Philadelphia.

Dr. John A. Messenheimer, assistant professor of neurology and medicine, participated in the American EEG Society annual meeting as an associate examiner on the American Board for Qualification in EEG June 14 in Chicago.

Phillip D. Buchanan, adjunct assistant professor of pediatrics, presented a scientific paper on "Early Prenatal Ultrasound Diagnosis of Urethral Atresia in a Fetus with the VATER Association" at the 1981 March of Dimes 14th Annual Birth Defects Conference June 17 in San Diego. Buchanan also was a visiting professor at the Southwest Biomedical Research Institute. He presented a talk titled "Review of Recent Developments in Prenatal Genetic Diagnosis" June 19 in Tempe, Ariz.

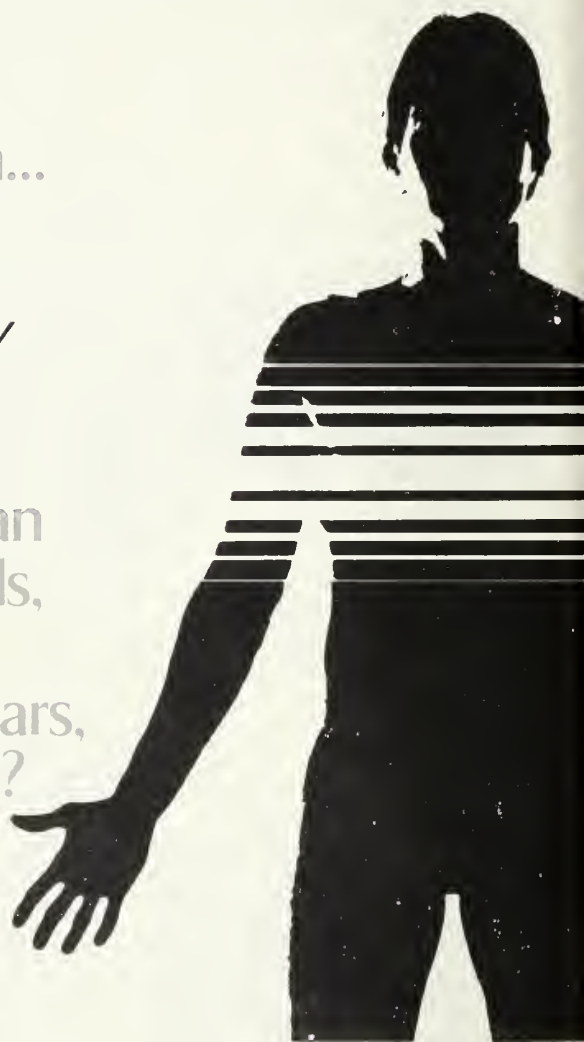
Mary Ellen Jones, Kenan professor and chairwoman of biochemistry, chaired a symposium at the annual meeting of the American Society of Biological Chemists June 4 in St. Louis. She also was elected councilor of the society.

Pierre Morell, professor of biochemistry, partici-

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pated in a special scientific program organized by the Multiple Sclerosis Society and chaired two sessions at the workshop on biology of oligodendroglin June 19-21 in Airlie, Va.

Dr. Charles P. Schuch, assistant professor of medical allied health professions, participated in the Physical Therapy Education Programs directors meeting during the annual conference of the American Physical Therapy Association June 26-27 in Washington, D.C.

Dr. James Mandell, assistant professor of pediatric urology, presented two papers and a poster session and was co-author of two other papers presented at the 76th annual meeting of the American Urological Association May 10-14 in Boston. Dr. Glenn M. Preminger, surgery, presented a paper and a poster session. Other co-authors of the papers or the poster

session included: Dr. Floyd A. Fried, professor and chief of the division of urology; Dr. Robert T. Herrington, associate professor of pediatrics; William E. Koch, professor of anatomy; Dr. Campbell W. McMillan, professor of pediatrics; and Dr. Donald E. Woosely, assistant professor of surgery. Preminger also won first prize for best research paper at the residents research forum of the N.C. chapter of the American College of Surgeons annual meeting May 15 in Boone. Fried, Koch and Mandell were co-authors of the paper.

Michael G. O'Rand, assistant professor of anatomy, presented a paper at the International Conference on Reproductive Immunology May 15-18 in Alberta, Canada.

Charles R. Hackenbrock, chairman and professor of anatomy, was invited lecturer of the National

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1982 will see the completion of the Multiple Risk Factor Intervention Trial (MRFIT)—a six-year, 12,000-patient study assessing the factors that increase risk of cardiovascular disease. For the management of hypertension, the preferred Step-2 regimen in this study is reserpine-thiazide.

In 1978, in a preliminary report presented to the Epidemiology Section of the American Heart Association (Dallas, Nov 1978), after 12 months of the trial, fewer patients (5.3%) treated with reserpine suffered depression than even the untreated control group (7.7%)!

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Council for Science and Technology and the Ministry of Education at the Medical Institute of Cluj, May 17-26 in Cluj, Romania.

Patricia Porter, chief of the communicative disorders section of the Division for Disorders of Development and Learning, presented a paper at the American Association on Mental Deficiency annual meeting May 25-29 in Detroit.

Dr. Joseph S. Pagano, professor of medicine and bacteriology, and director of the Cancer Research Center, participated in National Institutes of Health site visits May 26-28 at the University of Chicago Cancer Research Center and June 1-3 at the Medical College of Virginia Cancer Center in Richmond.

Dr. Harold R. Roberts, professor of medicine and pathology, chaired a symposium at the 14th Congress of the World Federation of Hemophilia July 3-7 in San Jose, Costa Rica.

Dr. Cecil Sheps, professor of community medicine and hospital administration, has been appointed to a two-year term on the membership committee of the Institute of Medicine, National Academy of Sciences.

Dr. James N. Hayward, chairman and professor of neurology, was elected president-elect of the N.C. Society for Neurosciences.

News Notes from the EAST CAROLINA UNIVERSITY SCHOOL OF MEDICINE

The School of Medicine is joining with Eastern Carolina Home Health, Inc., a private, non-profit organization that provides home-based nursing and rehabilitation care, to start a home-based hospice program in Pitt County.

The program, described by medical director Walter Pories as a "hospice without walls," began offering a variety of support to terminally ill patients in early October.

"We are recruiting a volunteer director who will train volunteers to help patients with advanced cancer and their families," said Pories. Hospice volunteers will do many tasks, include shopping, homemaking, cooking and counseling. They also will help coordinate ministerial support, maintain equipment and dressing supplies, and, when necessary, tutor patients and their children.

Pories, who is chairman of surgery at the School of Medicine, said the Pitt County hospice will differ from traditional hospices in urban areas. According to Pories, the hospice program emphasizes care in the home rather than in an institution and encourages physicians to provide continuing care to terminally ill patients. Traditionally, physicians frequently refer their patients to the hospice medical director for care.

"The physicians in Pitt County are very interested in continuing their care throughout the entire illness," said Pories. "Our hospice encourages this practice because it represents better medicine and is important to the patient and the family."

Both terminally ill patients and patients with advanced diseases will be eligible to participate in the program. Admission does not mean that no further medical therapy will be given. According to Pories, all types of treatment will be available, unlike more traditional hospice programs where only pain control is administered.

Two members of the Department of Pathology and Laboratory Medicine attended the annual meeting of the Reticuloendothelial Society in Milwaukee held October 12-16. Dr. Alvin Volkman, professor, and Dr. Paul H. Strausbauch, assistant professor, presented "Effects of ^{89}Sr Treatment on Mononuclear Phagocytes" and "Ultrastructure of Beige Mouse ($\text{C}_{57}\text{BL}/6\text{bg/bg}$) Resident Peritoneal Macrophages."

Dr. Walter J. Pories, professor and chairman of the Department of Surgery, and Dr. Allen F. Bowyer, professor of medicine, were guest speakers at the 1981 East Carolina University Phi Kappa Phi symposium entitled "Higher Education: Trends and Issues for the Eighties." Pories presented "Pre-medical Education: It Takes Years to Get Over It" and Bowyer presented "Intellectual Excellence: An Appropriate Goal for Education in the Computer Age."

Dr. David L. Beckman, professor of physiology, presented two papers he co-authored with Dr. Daniel J. Crittenden, research associate, at the meeting of the American Physiological Society in Cincinnati held October 12-16.

At the meeting, Beckman presented the papers entitled "Pulmonary Phospholipid Changes from Mechanical Head Injury" and "Blood Glucose and O_2 Toxicity."

Beckman and Crittenden also collaborated on an article entitled "Protection from Oxygen-induced Seizures by Clonazepam and Propylene Glycol." The article appears in the October issue of the *Proceedings of the Society for Experimental Biology and Medicine*.

Dr. A. Dewane Frutiger, associate director of the Developmental Evaluation Clinic, published "Con-

sortium Approach to Clinical Services" in the September issue of the *American Physical Therapy Association* journal.

R. Stephen Porter, Pharm. D., assistant professor of family medicine, presented a lecture entitled "Individualizing Drug Therapy" at the San Jose Health Center in California on October 1.

Dr. Lynn G. Borchert, assistant professor of obstetrics and gynecology, and Dr. Ross Duff, fourth-year obstetrics and gynecology resident, recently co-authored "Diagnosis and Management of Ectopic Pregnancy." Borchert presented the paper at the American College of Obstetrics and Gynecology District 4 meeting in Puerto Rico held October 20-25.

Dr. Theodore Kushnick, professor of pediatrics and director of the Developmental Evaluation Clinic, presented pediatric grand rounds at the Medical College of Virginia on October 19.

Dr. Charles E. Boklage, assistant professor of microbiology and immunology, recently attended the

annual meeting of the American Society of Human Genetics held at the University of Texas Health Science in Dallas. Boklage made a poster presentation which outlined "Twin Zygosity Differences in Developmental Relationships."

Dr. Allen F. Bowyer, professor of medicine, was a guest speaker at the annual Winston-Salem Heart Symposium held at Forsyth Memorial Hospital on October 23. Bowyer's lecture topic was "The Impact of Modern Cardiology Techniques on the Practice of Medicine."

Dr. Paul L. Fletcher Jr., associate professor of microbiology, recently attended the annual Research Park Liquid Chromatography Symposium and presented "Separations of Peptides and PTH Amino Acids." The symposium was sponsored by Burroughs Wellcome and Waters Associates.

Dr. Dennis R. Sinar, associate professor of medicine, presented "The Adverse Effects of Lidocaine on Esophageal Peristalsis" at the American Federation of Clinical Research symposium in Boston. The symposium was held October 22-23.

Drs. Lynis Dohm, Hisham A. Barakat and George

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J. Kasperek, associate professors of biochemistry, were recently granted \$54,619 from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases, NIH. The grant will be used to study "Control of Muscle Protein Metabolism During Exercise."

Dr. Ronald S. Johnson, a molecular biologist, has been appointed assistant professor of biochemistry. Johnson recently completed a postdoctoral fellowship at the University of California at Berkeley. He received his bachelor's degree and Ph.D. from Northwestern University.

Dr. Everett C. Simmons has been appointed assistant professor of psychiatric medicine. Prior to joining the faculty at the School of Medicine, Simmons was in a private general psychiatric practice in Columbia, S.C. He also was the medical advisor for the Division of Program Integrity in the Department of Social Services in Columbia. Simmons received his bachelor of science degree from Berea College in Kentucky and his medical degree from the University of Tennessee.

Dr. John E. Wimmer Jr. has been appointed assistant professor of pediatrics and director of the

neonatal outreach program for 29 counties in Eastern North Carolina. Wimmer was previously director of the neonatal unit at the Naval Regional Medical Center in San Diego. He also served as assistant clinical professor of pediatrics at the University of California in San Diego. He received his bachelor of science degree from Randolph-Macon College and his medical degree from the Medical College of Virginia.

News Notes from the DUKE UNIVERSITY MEDICAL CENTER

Because of the the increased demand for family medicine training, the Duke University School of Medicine has added a required clinical rotation in family practice. The curriculum change places family medicine on an equal basis with the other five major clinical specialties — internal medicine, pediatrics, psychiatry, surgery and obstetrics-gynecology.

Half of the eight-week clerkship is spent in the office of a practicing family physician, most of whom are scattered throughout North Carolina, primarily in small towns. The family practice clerkship also re-

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Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or

without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy

Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia

(especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

quires medical students to spend a month in a Durham family medicine clinic.

The rotation is supported by a \$720,000 three-year grant from the Department of Health and Human Services.

Dr. Talmage L. Peele, professor emeritus of anatomy and neurology at Duke University Medical Center, died Sept. 11 of an apparent heart attack while on vacation in Pargos, Greece. He was 73.

Peele was a Duke faculty member for 42 years. He was best known for his textbook, *The Neuroanatomic Basis for Clinical Neurology*, first published in 1954. His research in how neuroanatomy affects behavior laid the groundwork for later discoveries in nervous system chemistry. Peele graduated from Duke's medical school in the class of 1934, the first full four-year class.

Dr. Robert Machemer, chairman of the Duke University Medical Center Department of Ophthalmology, was awarded the highest honor of the German Ophthalmology Society. Machemer, who is a pioneer in the development of eye surgery techniques, was awarded the Von Graefe prize in September. The prize is awarded by the society every three years.

Machemer was awarded the prize in recognition of his contributions to vitreous surgery, the ophthalmic specialty that he initiated.

Dr. Phillip Handler, James B. Duke Professor of Biochemistry, was awarded the National Medal of Science by President Ronald Reagan.

Handler served as chairman of the National Academy of Sciences from 1969 to 1981 and was chairman of the National Science Board from 1962-1970. He retired from the academy in July. Except for his 12-year extended leave to serve at the academy, Handler has been at Duke since 1939.

"This award is the highest distinction that any scientist can receive in this nation," said Dr. William G. Anlyan, vice president for health affairs. "Dr. Handler has earned this very special honor as an outstanding leader of American science for these many years. We are proud to have him as a member of the Duke family."

The Duke Poison Control Center received a toll-free number Nov. 1: 1-800-672-1697.

The Duke Center, directed by Dr. Shirley K. Osterhout, is recognized as the state poison control center by all N.C. state departments and bureaus. The

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1 tablet b.i.d.

SUPPLIED

Bottles of 100 and 1000 scored 50 mg. tablets.

References:

1. Propranolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
2. Five-year findings of the hypertension detection and follow-up program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. Hypertension Detection and Follow-up Program Cooperative Group. *JAMA* 242:2562-2571, 1979.
3. The 1980 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Intern Med* 140:1280-1285, 1980.

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center provides an easily accessible central information resource for identification of toxic substances and treatment of poisonings.

The Duke Poison Control Center was established in 1954, the second one in the nation, as part of Duke's Department of Pediatrics. Dr. Jay Arena was the founder.

Two Duke University Medical Center scientists and a professor in the Duke School of Law have been elected to the National Academy of Sciences' Institute of Medicine.

Dr. Wolfgang K. Joklik, James B. Duke Professor of microbiology and immunology, Dr. Samuel L. Katz, Wilburt C. Davison, Professor of pediatrics, and Clark Havighurst, Professor of law, were selected for membership in the society because of their significant contributions to medicine and health care.

The Institute is limited to 400 members and was chartered by the National Academy of Sciences in 1970 to provide a continuing review of the problems of medicine and health care.

Joklik is an authority in the field of virology — the branch of microbiology concerned with viruses and viral disease. His research has been concentrated on

the mechanisms by which viruses multiply and how they affect their hosts. He has served on numerous advisory and professional committees in the field of virology and molecular cell biology, has published widely and is senior editor of *Zinsser Microbiology*, the standard text in that field. Joklik has been chairman of Duke's Department of Microbiology and Immunology since 1968.

Katz is renowned for his work in infectious diseases and pediatrics. Working with Nobel Laureate, Dr. John F. Enders, he developed the measles vaccine which has been used throughout the world to reduce the frequency of that infection in infants and children. Katz has served on many committees dealing with infectious diseases and with methods for their control. He is author or co-author of several books dealing with infectious diseases, especially those of viral origin. He has been chairman of Duke's Department of Pediatrics since 1968.

Clark Havighurst is an authority on the legal issues in health care. He has been professor in Duke's law school since 1968, and he also serves as an adjunct scholar in law and health policy with the American Enterprise Institute for Public Policy Research in Washington, D.C. Since 1969, Havighurst has directed a federally funded research program on legal issues



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in health care at the law school. In 1972-'73, he was scholar-in-residence at the Institute of Medicine of the National Academy of Sciences.

He has published widely, and is on the editorial boards of *American Journal of Law and Medicine* and *Journal of Health Politics, Policy and Law*. He is the author of *Deregulating the Health Industry*, scheduled for publication at the end of this year.

Thorir D. Bjornsson, assistant professor in the Departments of Pharmacology and Medicine, received a \$44,133 research grant from the National Heart, Lung and Blood Institute to study clinical pharmacology of heparin.

Vincent W. Dennis, associate professor in the Department of Medicine, received a \$43,276 National Research Service Award from the National Institute of Arthritis, Metabolism and Digestive Diseases to study kidney structure and function in health and disease.

Robert B. Jennings, professor and chairman of the Department of Pathology, received a \$122,647 research grant from the National Heart, Lung and Blood Institute. Jennings will use the grant to study myocardial ischemia.

Keith A. Reimer, associate professor in the Department of Pathology, was awarded a \$52,181 research grant from the National Heart, Lung and Blood Institute to study myocardial ischemia and reperfusion.

Dan G. Blazer, associate professor in the Department of Psychiatry, received a \$35,183 development award from the National Institute of Mental Health to study "Environmental Stress and Mental Health in the Elderly."

Paul L. Modrich, associate professor in the Department of Biochemistry, received a \$160,403 research grant from the National Institute of General Medical Sciences to study "Enzymatic Basis of Type II Restriction and Modification."

Montrose J. Moses, professor in the Department of Anatomy, received a \$47,452 research grant from the National Institute of General Medical Sciences for "Chromosome Analysis in Lemuriform Primates."

Paul M. Conn, assistant professor in the Department of Pharmacology, was awarded a \$31,644 research grant from the National Institute of Child Health and Human Development to study "Gonadotropin Releasing Hormone Actions — Role of CA^{2+} Ions."

Redford B. Williams Jr., professor of psychiatry and assistant professor of medicine, received a \$38,257 development award from the National Institute of Mental Health to study behavioral mechanisms in cardiovascular diseases.

Page A. Anderson, associate professor in the division of pediatric cardiology, received a \$78,258 research grant from the National Heart, Lung and Blood Institute for a project, "Developing Heart: Biophysical Aspects."

Robert L. Hill, professor and chairman of the Department of Biochemistry, received a \$143,212 research grant from the National Institute of General Medical Sciences to study the structure and function of proteins.

George S. Eisenbarth, assistant professor in the division of endocrinology, received a new investigator research award of \$31,601 from the National Institute of Arthritis, Metabolism and Digestive Diseases. He is studying the characterization of islet cell surface molecules.

Sharyn A. Endow, assistant professor in the Department of Microbiology and Immunology, received a research grant of \$13,700 from the March of Dimes Birth Defects Foundation.

George L. Maddox, director of the Center for the Study of Aging and Human Development, received a \$103,817 grant from the Department of Health and Human Services for a gerontology career preparation program.

D. Bernard Amos, professor of immunology and experimental surgery, was awarded a \$264,079 national research service award from the National Cancer Institute. Amos is studying tumor immunology and immunogenetics.

Brenda E. Armstrong, assistant professor in the division of pediatric cardiology, received a \$40,038 clinical investigator award from the National Heart, Lung and Blood Institute. Armstrong's area of study is clinical medicine.

News Notes from the BOWMAN GRAY SCHOOL OF MEDICINE WAKE FOREST UNIVERSITY

Dr. Wells Martin III has been appointed to the faculty of the Bowman Gray School of Medicine as assistant professor of radiology.

As a diagnostic radiologist, Martin is interested in general skeletal, orthopedic and emergency radiology. His primary research interest is in rheumatology studies.

Martin holds the B.A. degree from Dartmouth College and the M.D. degree from the Cincinnati College of Medicine. His house officer training was completed at the University of Virginia Hospital.

Prior to coming to Bowman Gray, Martin was staff radiologist at Albemarle Hospital in Elizabeth City.

Dr. John F. Hennessy, associate professor of medicine at Bowman Gray, has won a national competition sponsored by the American Diabetes Association. Winning has resulted in his receiving an award of \$8,000 from the association.

Hennessy will use the grant in research on the ef-

fects of altered red cell metabolism in long-term diabetics.

He is studying the mechanisms that prevent red cells from delivering oxygen to the body's tissues as they normally do, and the effect which the resulting oxygen debt has on diabetics over a long period. In addition he is trying to determine how those mechanisms can be altered to enable the red cells to release oxygen.

The same reluctance which once kept people from openly discussing breast cancer and breast self-examination still makes people unwilling to talk about testicular cancer and testicular self-examination.

That was part of the message brought to Bowman Gray by a cancer nurse attending a meeting at the medical school.

Judith Sandella, a nurse at the M.D. Anderson Hospital and Tumor Institute, said during the meeting it has only been in the last year that the subject of testicular cancer has received attention in the press.

Mrs. Sandella was speaking to other cancer nurses attending the annual conference of the Piedmont Oncology Association (POA). The POA consists of cancer specialists in a five-state region who work with Bowman Gray's Cancer Research Center in obtaining the latest developments in cancer treatment. The cancer nurses attended meetings as part of the POA conference.

Mrs. Sandella suggested that males ought to undergo examination of the testicles by a physician during yearly checkups. And, she said, by the age of 15, young men ought to have learned and be practicing testicular self-examination. School health programs and physical education programs are in a particularly useful position to teach both about the problem and the self-examination, she added.

When the federal government gives approval for the widespread use of a new ultrasound machine called MAVIS, and that approval may come quite soon, it will owe much to Bowman Gray's ultrasound program and to people like Dr. Chris Wood.

Wood is an English surgeon who has spent more than a year at Bowman Gray helping to prove that MAVIS lives up to the dream of its inventor.

MAVIS is an acronym for Mobile Artery and Vein Imaging System. The machine is built in England by Picker International, Ltd.

According to Wood, who now has returned to England, MAVIS uncovers atherosclerosis in such arteries as the carotids and vertebrals by uncovering the blood turbulence occurring as the result of atherosclerotic buildup on the artery wall.

Wood worked to see that MAVIS met its specifications and conducted research with others to better define the potential applications of the machine. The research uncovered information that MAVIS may help measure the effect of artery problems within the skull, problems which traditionally have been inaccessible to ultrasound. And MAVIS has been shown to have the potential for uncovering atherosclerosis in certain arteries while the disease is in its earliest stages.

Dr. George Podgorny, clinical associate professor of surgery (emergency medicine), has been elected chairman-elect of the Board of Directors of the Emergency Medicine Foundation of Dallas, Texas.

Dr. Charles H. McLesky, assistant professor of anesthesia, has been selected to serve on the editorial advisory board of the "Anesthetist Update Series" and has been elected an alternate delegate from North Carolina to the meeting of the American Society of Anesthesiologists.

AMERICAN ACADEMY OF OPHTHALMOLOGIC AND OTOLARYNGOLOGIC ALLERGY

Dr. John Foust of Charlotte was chosen 2nd president elect of the American Academy of Ophthalmologic and Otolaryngologic Allergy at its meeting in September in New Orleans. Dr. George Viscomi of Clearwater, Fla., was installed as president.

SAMUEL BUTLER [1835-1902]

They regard bodily ailments as the more venial in proportion as they have been produced by causes independent of the constitution. Thus if a person ruin his health by excessive indulgence at the table or by drinking, they count it to be almost a part of the mental disease which brought it about, and so it goes for little, but they have no mercy on such illnesses as fevers or catarrhs or lung diseases, which to us appear to be beyond the control of the individual.

Erewhon, Ch. X

In Memoriam

KWAN BEEN CHOI, M.D.

Dr. Kwan Been Choi died Aug. 24, 1981, at Duke Hospital in Durham.

Born March 25, 1938, in Seoul, Korea, Dr. Choi graduated from the Catholic Medical College in Seoul in 1963. He received his neurological training at Ellis Hospital, Schenectady, N.Y., in 1967-68, Veterans Administration Hospital, Bronx, 1969-70, Albany Medical College Hospital, Albany, N.Y., 1970-72, and the Bowman Gray School of Medicine, 1972-73.

He practiced neurology at the Lynchburg Training School Hospital, 1973-74, and the Veterans Administration Hospital, Fayetteville, 1974-76. He began the practice of neurology at Southeastern General Hospital in Lumberton in April of 1976.

He was a Diplomate of the American Board of Neurology and a member of the Robeson County Medical Society and the American Medical Association.

He is survived by his wife, Sal Hue Choi; three sons, Richard, Toney and Inho; his mother and four sisters.

ROBESON COUNTY MEDICAL SOCIETY

HUGH ARCHIE MATTHEWS, M.D.

Dr. Hugh Archie Matthews of Cullowhee, physician and adjunct professor at Western Carolina University, died Wednesday, May 13, 1981, in a Sylva hospital following a long illness. He was 66.

Matthews was a native of Buies Creek and was the son of the late Neil Archie and Annie Jane Stewart Matthews.

He attended Buies Creek Academy, Wake Forest University, and earned his master's degree at the University of North Carolina at Chapel Hill before entering medicine. He went from Chapel Hill to Yale for two years of post-graduate work in student development before taking up medical studies at Duke University. He did his medical internship at Johns Hopkins University in Baltimore, Maryland.

He served with the U.S. Fifth Army in World War II in the Mediterranean Theater.

After the war, Matthews began a 22-year career as a

family physician in Canton. His interest in preparing paramedical workers to serve mountain counties took him to Western Carolina University in 1969.

Matthews, class of '34, was cited for his years of service to humanity in such capacities as boys' work secretary, counselor to migrant laborers, high school teacher, battalion surgeon (Army Medical Corps), family physician, and director of health services and adjunct professor of nursing and health services at Western Carolina University. He held the last-named position for 10 years prior to his retirement in 1978.

The physician-author held membership in numerous professional societies and contributed frequently to medical journals, including the NORTH CAROLINA MEDICAL JOURNAL, and health publications, and was guest lecturer at Bowman Gray School of Medicine. He published "Neil's Way," a biographical study of his boyhood home and family, and also authored "Leaves From the Notebook of An Appalachian Physician."

Matthews was former president of the State of Franklin Health Council, Inc., and executive board member of the Western North Carolina Health Systems Agency. He received the Distinguished Service Award of the North Carolina Public Health Association in 1962 and served as chairman of the North Carolina Medical Society's Committee on Rural Health and Education for six years. He was founder and first president of the North Carolina Rural Health and Safety Council.

He served on Governor's Commissions on cancer, centers for disturbed children, and N.C. Highway Safety Council. He was a member of the board of trustees of Campbell University and was former member of the General Board of the Baptist State Convention.

Surviving are his wife, Ruth Burch Matthews; a daughter, Mrs. Stephen G. Takacs of Raleigh; a son, Albert B. Matthews of Maggie Valley; three sisters, Mrs. W. C. Johnson of Waynesville, Mrs. L. C. Gregory of Angier, and Mrs. A. Z. Byrd of Raleigh; four brothers, Lee A. Matthews of Canton, P. W. Matthews of Lillington, and N. P. and O. G. Matthews of Buies Creek; and a granddaughter.



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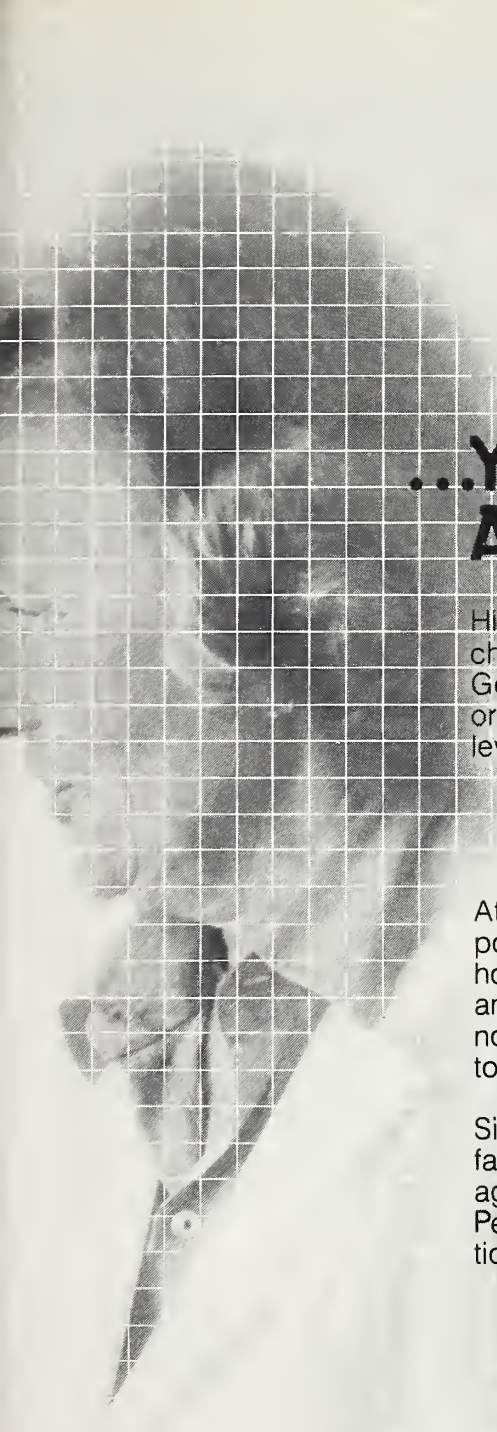
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Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

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Dosage: Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d., adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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North Carolina MEDICAL JOURNAL

March 1982, Vol. 43, No. 3

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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- **only a 60% cure rate with penicillin V-K**



As seen on admission



After one week of penicillin V-K therapy



Two weeks after initiation of TEGOPEN therapy

Treatment failure was judged to have occurred when lesions increased in size and/or number during the initial week of treatment with penicillin V-K. No treatment failures occurred with Tegopen.

*Data on file, Bristol Laboratories.

Brief Summary of Prescribing Information

TEGOPEN®
(cloxacillin sodium)
Capsules and Oral Solution

For complete information, consult Official Package Circular

(12) 9/11/75

INDICATIONS:

Although the principal indication for cloxacillin sodium is in the treatment of infections due to penicillinase-producing staphylococci, it may be used to initiate therapy in such patients in whom a staphylococcal infection is suspected. (See Important Note below.)

Bacteriologic studies to determine the causative organisms and their sensitivity to cloxacillin sodium should be performed.

IMPORTANT NOTE

When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

CONTRAINDICATIONS:

A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication

RESULTS OF ORAL THERAPY revealed a high percentage of treatment failures with penicillin V potassium, but *no* failures with Tegopen.

		Given Tegopen® (cloxacillin sodium)	Given penicillin V-K
<i>Staphylococcus aureus</i>	(78 patients)	39	39
Returned to clinic at one week	.....	29†	38†
Treatment failure at one week	.....	0	18 (47.4%)
<i>Staphylococcus aureus</i> and <i>Streptococcus pyogenes</i>	(9 patients)	4	5
Returned to clinic at one week	.....	4	5
Treatment failure at one week	.....	0	2 (40%)
No initial bacterial growth	(14 patients)	9	5
All 14 healed, regardless of which antibiotic was administered.			
Beta-hemolytic <i>Streptococcus</i>	(1 patient)	0	1
TOTALS:	102 patients	52 patients	50 patients

†Eleven patients did not return for their one-week checkup. These were all called by telephone, and their families reported

the lesions had healed. One patient was dropped from the study, early, because of adverse reaction to medication.

STUDY: DESCRIPTION/PROTOCOL

- 102 nonselected subjects, with initial bacteriology as follows: 77% *Staphylococcus aureus*, 9% mixed *Staphylococcus aureus* and *Streptococcus pyogenes*, and 1% beta-hemolytic *Streptococcus*.†
- All patients were given randomized therapy—Tegopen capsules or oral solution, or penicillin V-K tablets or oral solution, in recommended dosages according to body weight.

- All patients were evaluated after one week's therapy. If there was no improvement, therapy was switched to the other antibiotic. The "other antibiotic" proved to be Tegopen 100% of the time because no treatment failures had occurred with Tegopen.
- A final assessment of progress was made two weeks after initiation of Tegopen therapy.

†The remainder, to equal 100%, consisted of 14 patients (13%) who exhibited no initial bacterial growth. These 14 were all healed, whether given Tegopen or penicillin V-K.

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-effective therapy for staph infections of the skin and skin structures

WARNING:

Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. Although anaphylaxis is more frequent following parenteral therapy it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens.

There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

PRECAUTIONS:

The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

ADVERSE REACTIONS:

Gastrointestinal disturbances, such as nausea, epigastric discomfort, flatulence, and loose

stools, have been noted by some patients. Mildly elevated SGOT levels (less than 100 units) have been reported in a few patients for whom pretherapeutic determinations were not made. Skin rashes and allergic symptoms, including wheezing and sneezing, have occasionally been encountered. Eosinophilia, with or without overt allergic manifestations, has been noted in some patients during therapy.

USUAL DOSAGE:

Adults: 250 mg. q. 6h.

Children: 50 mg./Kg./day in equally divided doses q. 6h. Children weighing more than 20 Kg. should be given the adult dose. Administer on empty stomach for maximum absorption.

N.B.: INFECTIONS CAUSED BY GROUP A BETA-HEMOLYTIC STREPTOCOCCI SHOULD BE TREATED FOR AT LEAST 10 DAYS TO HELP PREVENT THE OCCURRENCE OF ACUTE RHEUMATIC FEVER OR ACUTE GLOMERULONEPHRITIS.

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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 10

MARCH 1982

Dear Colleagues:

Another long session of the Executive Council occurred on February 5 and 6. A Vice-President observed that there is little wonder that so many of us are "broad in the beam". Much discussion centered on the "Feasibility Study" concerning the necessity of a new roof and the feasibility of an additional floor for the Society's Headquarters Building. The ad hoc Committee will continue its study and make its final report on April 3 in order that it can be considered at the May House of Delegates.

The Council discussed, at length, the four excellent reports on Medicaid submitted by the ad hoc Committee of Chairman of the Specialty Sections. The Council approved Reports A, B, and D and, quite appropriately, referred Report C to the House of Delegates for consideration. Pursuant to this action, Reports A, B, and D were submitted to Sarah T. Morrow, M.D., before our deadline date, February 15. Because of the importance of these reports, they are attached to this letter. Please read all -- particularly Report C so that your views can be expressed at the Reference Committee and in the House of Delegates!

On February 16, the "Request for Proposal" for the State Employees' Health Plan was released. Rumor has it that 100 copies were made available to prospective bidders. In a recent NEWSLETTER, I discussed some of the criteria proposed by the Mercer Company, which caused concern among our members. Although we were successful in eliminating the limitation on prenatal visits, the RFP still has some features which will be distasteful to physicians and not cost-effective for State Employees or the State. Unless a second surgical opinion is obtained (except on an emergency basis), reduced benefits will be paid for these five surgical procedures: hemorrhoidectomy, cholecystectomy, total hysterectomy, transurethral resection of the prostate, tonsillectomy and adenoidectomy. This reduction in benefits will apply to physician fees as well as to hospital room and board and cannot be included in the deductible or out-of-pocket limit of the State Employees, who will then be billed by both the hospital and the physician. The Plan Administrator will be required to provide the employee the names of three conveniently located board certified surgeons and will also arrange for the appointment of the patient with the second surgeon. Mercer Company felt that the Plan Administrator might need to "contract for services by physicians providing second opinions". However, the Plan will pay benefits "as usual" as long as the second opinion has been obtained "regardless of the opinion". Payment will be made by the Plan to the second surgeon, and for any additional laboratory and x-ray examinations required.

Eight optional cost containment programs are listed and each proposal must contain four optional programs of the Plan Administrator's choice and design. Retrospective review is a requirement. The optional programs are:

1. Program to Reduce Weekend Admission Stays
2. Program for Current Hospitalization Utilization Review

3. Program for Prospective Hospitalization Utilization Review
4. Program for Prospective Review of Emergency Room Use
5. Utilization and Cost Review of Ancillary Services
6. Alternative Reimbursement Methods -- Hospital and Physicians
7. Incentive Program to Reduce Hospital Stays
8. Program to Promote Use of Home Health Care

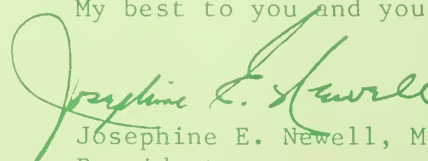
In December, I wrote you that several large County Medical Societies were quite concerned about North Carolina's Right to Natural Death Statutes ("Living Will", etc.). Because of growing concern, at my request, our Legal Counsel wrote a paper for the December NCMJ on the matter. Because of increasing concern and frustration of the membership, an ad hoc Committee, chaired by Julius Howell, M.D., J.D., has been appointed to study the ethical, legal and medical aspects of the Statute and its 1981 Amendment. The Section Chairmen, the core of the new ad hoc Committee, demonstrated their eagerness to have a part in major medical policy decisions by their conscientious response to the recent Medicaid issue. They will be joined by three members of the Ethics Committee and the Executive Committee of the Committee on Legislation. Our sagacious colleague, Julius Howell, both an attorney and plastic surgeon, has called the first meeting of the ad hoc Committee on Sunday, February 28, 1982. Top priority must be given this issue which holds such serious implications for the practice of medicine as well as the life and death of our patients.

At its February meeting, the Council devised a questionnaire, to be sent to the entire membership, for your personal evaluation of services now being rendered by the State Society. PLEASE COMPLETE AND RETURN in the enclosed postage paid envelope as soon as you receive it, by SEPARATE MAILING. It is essential that the Council knows your evaluation of the effectiveness of the Society's current operation. In this era of austere budgeting, it is vital to determine the cost-effectiveness of each of the Society's publications. The continued publication of each (THE NORTH CAROLINA MEDICAL JOURNAL, THE BULLETIN, PRESIDENT'S NEWSLETTER) may be determined by your responses, after consideration by the House of Delegates! The Executive Council earnestly desires to structure the North Carolina Medical Society to best meet the needs of its membership!

At last, we have a definition of the "visit or encounter," in the Medicaid "18 visits". All professional services rendered to a recipient on one date of service for the same complaint will be counted as one visit. BE SURE that you and your staff read all "SPECIAL MEDICAID BULLETINS" received in the past 60 days and those to be published very soon. Again, our gratitude has been expressed to Barbara D. Matula and Sarah T. Morrow, M.D., for helping us out of this ditch -- one more time!

Please plan to attend the Annual Meeting of the North Carolina Medical Society, May 6-8. Critical medical issues will be addressed by the Legislature during its June Session. The Medical Society must consider each of these issues and determine a firm stand on each -- during our Annual Meeting in May. Every member is welcome at both sessions of the House of Delegates (Thursday, May 6, and Saturday, May 8). Remember that any member can speak at Reference Committee hearings, which will occur Thursday afternoon, May 6. Come and be heard! Your opinion is just as important as that of any other member. We cannot represent you without your direction. Your participation is essential!

My best to you and your family,


Josephine E. Newell, M.D.
President

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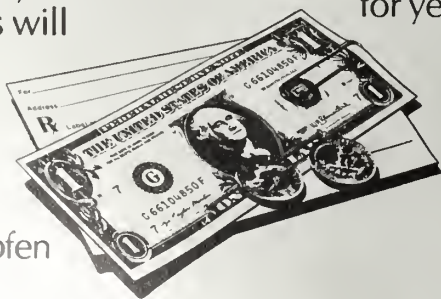
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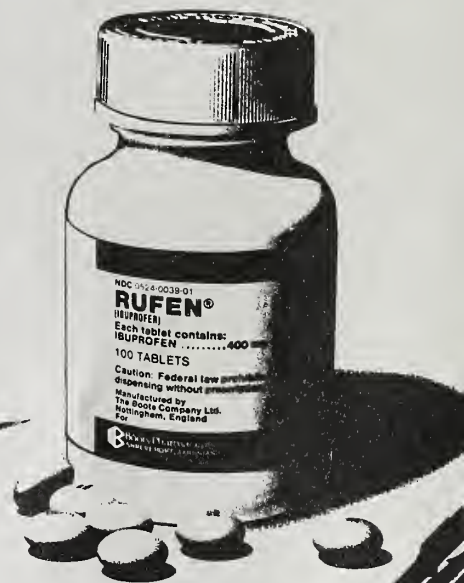
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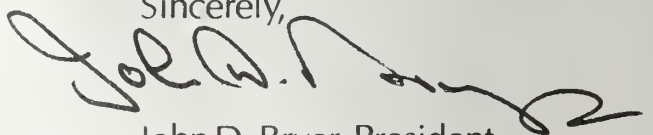
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6540 LINE AVENUE, SHREVEPORT, LOUISIANA 71106

Pioneers in medicine for the family

RUFEN® (ibuprofen/Boots)

(For full prescribing information, see package brochure)

RUFEN® Tablets
(ibuprofen)

INDICATIONS AND USAGE: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in the long-term management of these diseases. Safety and effectiveness have not been established for Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain.

CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory drugs (see **WARNINGS**).

WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see **CONTRAINDICATIONS**). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration, perforation, or gastrointestinal bleeding can end fatally; however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease and only after consulting the **ADVERSE REACTIONS**.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: Coumarin-type anticoagulants. The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin. Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS

Incidence greater than 1%

Gastrointestinal: The most frequent adverse reaction is gastrointestinal (4% to 16%). Includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating or flatulence). **Central Nervous System:** dizziness*, headache, nervousness. **Dermatologic:** rash* (including maculopapular type), pruritus. **Special Senses:** tinnitus. **Metabolic:** decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see **PRECAUTIONS**).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** depression, insomnia. **Dermatologic:** vesiculobullous eruptions, urticaria, erythema multiforme. **Special Senses:** amblyopia (see **PRECAUTIONS**). **Hematologic:** leukopenia, decreased hemoglobin and hematocrit. **Cardiovascular:** congestive heart failure in patients with marginal cardiac function, elevated blood pressure.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** paresthesias, hallucinations, dream abnormalities. **Dermatologic:** alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** gynecostasia, hypoglycemia. **Cardiovascular:** arrhythmia (Sinus tachycardia, bradycardia, and palpitations). **Renal:** decreased creatinine clearance, polyuria, azotemia.

OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine; alkaline diuresis may benefit.

DOSAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d.

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain. Do not exceed 2,400 mg per day.

CAUTION: Federal law prohibits dispensing without prescription.

Boots Pharmaceuticals, Inc.
Shreveport, Louisiana 71106

OFFICIAL CALL HOUSE OF DELEGATES

HOUSE OF DELEGATES Meetings Scheduled

Notice to: Delegates, Alternate Delegates, Officials of the North Carolina Medical Society, and Presidents and Secretaries of county medical societies.

Sessions of the HOUSE OF DELEGATES will convene in the Cardinal Ballroom, Pinehurst Hotel, Pinehurst, North Carolina, at the following times:

Thursday, May 6, 1982—10:00 a.m.—Opening Session
Saturday, May 8, 1982— 2:00 p.m.—Second Session

A member of the CREDENTIALS COMMITTEE will be present at the Desk in the Hotel Lobby, Wednesday, May 5, 1982, 3:00 p.m. to 5 p.m., and Thursday, May 6, 1982, 8:30 a.m. to 10:00 a.m. to certify Delegates. Delegates are urged to bring their Credential Cards for presentation at the Registration Desk. Delegate Badges must be worn to be seated in the HOUSE OF DELEGATES.

REFERENCE COMMITTEE HEARINGS

Reference Committee hearings are scheduled to begin Thursday, May 6, 1982, at 2:00 p.m.

JOSEPHINE E. NEWELL, M.D., President
HENRY J. CARR, JR., M.D., Speaker
JACK HUGHES, M.D., Secretary
WILLIAM N. HILLIARD, Executive Director

Highlights of the Program

**128th Annual Session
North Carolina Medical Society
May 6 - 9, 1982
Pinehurst Hotel
Pinehurst, North Carolina**

WEDNESDAY, MAY 5, 1982

12:00 Noon-5:00 pm — REGISTRATION — (West Lobby)
1:00 pm-5:00 pm — SECTION ON PUBLIC HEALTH & EDUCATION — (Azalea Bar)

THURSDAY, MAY 6, 1982

8:00 am-5:00 pm — REGISTRATION — (West Lobby)
8:30 am-5:00 pm — EXHIBITS open — (North, South & Dogwood Rooms)
10:00 am — HOUSE OF DELEGATES — Opening Session — (Cardinal Ballroom)
12:00 Noon — LUNCH — SECTION ON OPHTHALMOLOGY — (Crystal Room)
2:00 pm-5:00 pm — Scientific Session — SECTION ON OPHTHALMOLOGY — (Crystal Room)
2:00 pm-5:00 pm — REFERENCE COMMITTEE HEARINGS — (Cardinal Ballroom, Azalea Bar, and Board Room)
3:00 pm-5:00 pm — SECTION ON UROLOGY — (Pine Room)
5:30 pm — SOCIAL HOUR — SECTION ON UROLOGY — (Pine Room)
6:00 pm — SOCIAL HOUR — Medical College of Virginia (MCV) — (Room #439)
7:00 pm — DINNER — Medical College of Virginia (MCV) — (Crystal Room)

FRIDAY, MAY 7, 1982

8:00 am-5:00 pm — REGISTRATION -- (West Lobby)
8:30 am-5:00 pm — EXHIBITS open
8:30 am-9:00 am — CONJOINT SESSION — North Carolina Medical Society & North Carolina Division for Health Services — (Cardinal Ballroom)
9:00 am-11:00 am — SECTION ON ORTHOPAEDICS — (Pine Room)
9:00 am-12:00 Noon — FIRST GENERAL SESSION — (Surgical Session) — (Cardinal Ballroom)
9:00 am-1:00 pm — Commission for Health Services — (Board Room)

9:00 am-1:00 pm — Scientific Session — SECTION ON OTOLARYNGOLOGY & MAXILLOFACIAL SURGERY — (Banquet Room — Pinehurst Country Club)

9:00 am-5:00 pm — SECTION ON FAMILY PRACTICE — (Azalea Bar)

9:30 am-10:30 am — Executive Committee Meeting — N.C. Pediatric Society — (Room #129)

10:00 am-1:00 pm — North Carolina Society of Plastic, Maxillofacial & Reconstructive Surgeons — (Mid Pines Resort)

10:30 am — LIAISON COMMITTEE MEETING — N.C. Pediatric Society — (Crystal Room)

11:30 am — Business Session — SECTION ON EMERGENCY MEDICINE — (Pine Room)

12:00 Noon — LUNCH — N.C. Pediatric Society — (Crystal Room)

1:00 pm-6:00 pm — Scientific Session — SECTION ON EMERGENCY MEDICINE — (Pine Room)

2:00 pm-5:00 pm — Scientific Session — SECTION ON ALLERGY & IMMUNOLOGY — (Board Room)

2:00 pm-5:00 pm — Scientific Session — SECTION ON PEDIATRICS — (Crystal Room)

5:30 pm-6:30 pm — SOCIAL HOUR — BOWMAN GRAY — (Azalea Bar)

6:30 pm — SOCIAL HOUR — UNC — (West Porch)

6:30 pm — SOCIAL HOUR — DUKE Medical Alumni — (Banquet Room — Pinehurst Country Club)

6:30 pm-8:00 pm — EXHIBITORS' RECEPTION

SATURDAY, MAY 8, 1982

8:00 am-3:00 pm — REGISTRATION — (West Lobby)

8:00 am-12:00 Noon — Scientific Session — SECTION ON DERMATOLOGY — (Crystal Room)

8:00 am-12:00 Noon — Scientific Session — SECTION ON PATHOLOGY — (Resort Club — Pinehurst Country Club)

8:00 am-12:00 Noon — Scientific Session — SECTION ON NEUROLOGY & PSYCHIATRY — (Azalea Bar)

8:00 am-1:00 pm — Scientific Session — SECTION ON ANESTHESIOLOGY — (Pine Room)

9:00 am-12:00 Noon — Scientific Session — SECTION ON OBSTETRICS & GYNOCLOGY — (Board Room)

9:00 am-12:00 Noon — Scientific Session — SECTION ON RADIOLOGY & NUCLEAR MEDICINE — (Meeting House — Mid Pines Club)

9:00 am-12:30 pm — SECOND GENERAL SESSION — (Cardinal Ballroom)

12:00 Noon — PICNIC — SECTION ON DERMATOLOGY — (West Porch)

1:00 pm — LUNCH — SECTION ON NEUROLOGICAL SURGERY — (Crystal Room)

2:00 pm-5:00 pm — Scientific Session — SECTION ON NEUROLOGICAL SURGERY — (Crystal Room)

2:00 pm — HOUSE OF DELEGATES — SECOND SESSION — (Cardinal Ballroom)

6:30 pm-7:30 pm — PRESIDENT'S RECEPTION — (Lower Lobby)

7:30 pm — PRESIDENT'S DINNER — (Cardinal Ballroom)

9:00 pm — PRESIDENT'S BALL — (Cardinal Ballroom)

SUNDAY, MAY 9, 1982

8:30 am — BREAKFAST — N.C. AMA Delegation — (Crystal Room)

CONJOINT SESSION

Friday, May 7, 1982 Cardinal Ballroom
8:30 am-9:00 am

CONJOINT SESSION — North Carolina Medical Society and North Carolina Division of Health Services

GENERAL SESSIONS

First General Session

Friday, May 7, 1982 Cardinal Ballroom
9:00 am-12:00 Noon

Convene Session

Presiding: Josephine E. Newell, M.D., President, Raleigh
Invocation:

Surgical Session

Department of Surgery, Duke University Medical Center, Durham

9:00 am — Opening Remarks: Ewald W. Busse, M.D., Associate Provost and Dean, Medical and Allied Health Education, Duke University Medical Center

MODERATOR: David C. Sabiston, Jr., M.D., James B. Duke Professor and Chairman, Department of Surgery, Duke University Medical Center, Durham

9:05 am — ANNUAL HOOPER MEMORIAL LECTURE, PARENTERAL HYPERALIMENTATION IN THE MANAGEMENT OF PATIENTS WITH TRAUMATIC INJURIES
George F. Sheldon, M.D., Professor of Surgery, University of California at San Francisco and Chief of the Trauma Service, San Francisco General Hospital

10:00 am — MANAGEMENT OF POST-TRAUMATIC PULMONARY INSUFFICIENCY
Joseph A. Moylan, M.D., Professor of Surgery and Chief of the Trauma Service, Duke University Medical Center

10:15 am — COFFEE BREAK

10:30 am — HEAD TRAUMA: THE IMPACT OF MODERN IMAGING TECHNOLOGY UPON NEUROSURGICAL MANAGEMENT
Richard S. Kramer, M.D., Associate in Neurosurgery, Duke University Medical Center

10:45 am — REPLANTATION OF UPPER EXTREMITIES
James A. Nunley, II, M.D., Assistant Professor of Orthopaedics, Duke University Medical Center

11:00 am — MANAGEMENT OF FACIAL INJURIES
Gregory S. Georgiade, M.D., Assistant Professor of Surgery, Duke University Medical Center

11:15 am — MANAGEMENT OF TRAUMATIC INJURIES OF THE HEART AND GREAT VESSELS
J. Scott Rankin, M.D., Assistant Professor of Surgery and Physiology, Duke University Medical Center

11:30 am — PANEL DISCUSSION:
George F. Sheldon, MD, Chairman
Gregory S. Georgiade, M.D.
Richard S. Kramer, M.D.
Joseph A. Moylan, M.D.
James A. Nunley, II, M.D.
J. Scott Rankin, M.D.

12:00 Noon — ANNOUNCEMENTS

ADJOURN

(The Duke University School of Medicine, office of Continuing Education certifies that this continuing medical education activity meets the criteria for credit in Category I of the Physician's Recognition Award of the American Medical Association.)

Second General Session

Saturday, May 8, 1982 Cardinal Ballroom
9:00 am-12:30 pm

Convene Session

Presiding: John W. Foust, M.D., First Vice President
Charlotte

Medical Session

University of North Carolina, Department of Medicine, Chapel Hill

8:45 am — Opening Remarks: David A. Ontjes, M.D., Professor & Acting Chairman, Department of Medicine

Welcome: Stuart Bondurant, M.D., Dean, School of Medicine, University of North Carolina

Moderator: Joseph S. Pagano, M.D., Professor of Medicine & Director, Cancer Research Center

9:00 am — ENDOSCOPY IN THE MANAGEMENT OF PATIENTS WITH GASTROINTESTINAL CANCER

Eugene Bozyski, M.D., Professor of Medicine, Division of Digestive Diseases and Nutrition

9:40 am — CURABLE METASTATIC CANCER — SELECTION AND PROGNOSIS

Robert Capizzi, M.D., Professor of Medicine, Division of Hematology/Oncology, University of North Carolina, School of Medicine

10:20 am — COFFEE BREAK

10:40 am — NUTRITIONAL SUPPORT OF THE PATIENT WITH CANCER

William Heizer, M.D., Professor of Medicine, Division of Digestive Diseases and Nutrition, University of North Carolina, School of Medicine

11:20 am — PSYCHOLOGICAL ASPECTS OF CANCER CARE

Cheryl McCartney, M.D., Assistant Professor of Psychiatry, Adjunct Assistant Professor of Obstetrics and Gynecology, University of North Carolina, School of Medicine

12:00 Noon — ANNUAL ADDRESS OF THE PRESIDENT

Josephine E. Newell, M.D., President, Raleigh

12:30 pm — ANNOUNCEMENTS

ADJOURN

(The University of North Carolina School of Medicine, Office of Continuing Education certifies that this continuing medical education activity meets the criteria for credit in Category I of the Physicians' Recognition Award of the American Medical Association.)

WEDNESDAY, MAY 5, 1982

SECTION ON PUBLIC HEALTH & EDUCATION

Wednesday, May 5, 1982

1:30 pm-5:00 pm Azalea Bar

CHAIRMAN: Verna Y. Barefoot, M.D., New Bern

Scientific Session:

1:30 pm-2:15 pm — ROCKY MOUNTAIN SPOTTED FEVER

J.N. McCormack, M.D., Raleigh

2:15 pm-3:00pm — SCREENING FOR LEAD TOXICITY

Audrey Sayers, M.D., Black Mountain

3:00 pm-4:00 pm — AMBULATORY PEDIATRICS IN A HEALTH DEPARTMENT

Thomas Irons, M.D., New Bern

Business Session:

4:00 pm-5:00 pm — Election of Officers, Delegate and Alternate Delegate for 1982-83

THURSDAY, MAY 6, 1982

SECTION ON OPHTHALMOLOGY

Thursday, May 6, 1982

12:00 Noon-5:00 pm Crystal Room

CHAIRMAN: J. Lawrence Sippe, M.D., Charlotte

PROGRAM CHAIRMAN: Edward K. Isbey, Jr., M.D., Asheville

Scientific Session:

2:00 pm ARGON LASER TRABECULOPLASTY IN OPEN-ANGLE GLAUCOMA

L. Frank Cashwell, M.D., Winston-Salem

2:15 pm — LASER TRABECULAR THERAPY IN OPEN-ANGLE GLAUCOMA

David P. Perry, M.D., Durham

2:30 pm — MODIFIED PARKS PROCEDURE FOR V-PATTERN EXOTROPIAS BY INFERIOR OBLIQUE AND LATERAL RECTUS MUSCLE RECESIONS: THE PHOTOGRAPHY OF OPHTHALMIC SURGERY, WITH THE PHOTOGRAPHER THE SURGEON

E. Randolph Wilkerson, Jr., M.D., Charlotte

2:45 pm — CLINICAL PRESENTATIONS OF OPTIC DISC DRUSEN

Richard E. Sievers, M.D., Winston-Salem

3:00 pm — CORNEAL TRANSPLANTATION FOR SPONTANEOUS CORNEAL PERFORATION, TECHNIQUE AND RESULTS

Michael Cobo, M.D., Durham

3:15 pm — COFFEE BREAK

3:30 pm — POSTERIOR SCLERITIS PRESENTING AS AN ORBITAL MASS

J. Richard Marion, M.D., Winston-Salem

3:45 pm — EPISCLERAL AND ORBITAL PSEUDO-RHEUMATOID NODULES

Mark Ross, M.D., Chapel Hill

4:00 pm — CHOROIDAL MALIGNANT MELANOMA IN SIBLINGS

Kenneth B. Simons, M.D., Chapel Hill

4:15 pm — POSTERIOR CHAMBER IMPLANTS WITHOUT IRIDECTOMY

Paul J. Simel, M.D., Greensboro

4:30 pm — SECONDARY INTRAOCULAR LENS IMPLANTATION

Charles W. Tillett, M.D., Charlotte

4:45 pm — DIAGNOSTIC SIGNIFICANCE OF THE FLUORESCEIN ANGIOGRAM IN DIABETICS

Donald P. Renaldo, M.D., Charlotte

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

SECTION ON UROLOGY

Thursday, May 6, 1982

3:00 pm-5:00 pm Pine Room

CHAIRMAN: Donald T. Lucey, M.D., Raleigh

Scientific Session:

Presented by: David F. Paulson, M.D., Professor
& Chairman Department of Urology, Duke
University Medical Center, Durham
Lowell King, M.D., Director of Pediatric
Urology, Duke University Medical Center,
Durham

Business Session:

Election of Officers, Delegate and Alternate
Delegate for 1982-83

5:30 pm — SOCIAL HOUR — (Pine Room)

FRIDAY, MAY 7, 1982

SECTION ON FAMILY PRACTICE

Friday, May 7, 1982

8:30 am-5:00 pm Azalea Bar

CHAIRMAN: Hal M. Stuart, M.D., Elkin

PROGRAM CHAIRMAN: Robert G. Townsend, Jr.,
M.D., Raeford

8:30 am-12 Noon — Board of Directors meeting
North Carolina Academy of Family Physicians

Scientific Session:

2:00 pm-2:40 pm — OFFICE IMMUNOLOGY
Lyndon K. Jordan, M.D., F.A.A.F.P.,
Diplomate, American Board of Family Practice,
Former Director, Duke Family Practice Program,
Past President, NCAFP, private practice,
Smithfield

3:00 pm-3:40 pm — CURRENT CONCEPTS IN
THE TREATMENT OF ANGINA PECTORIS
Joe Ellis Gaddy, Jr., M.D., private practice,
Cardiology, Winston-Salem

4:00 pm-4:40 pm — HEALTH HAZARDS OF
IONIZING RADIATION
Michael F. Fleming, M.D., Assistant Professor of
Family Practice, University of North Carolina,
Chapel Hill

Business Session:

Election of Officers, Delegate and Alternate Delegate
for the year 1982-83

COMBINE MEETING

SECTION ON ORTHOPAEDICS

and

SECTION ON PLASTIC AND RECONSTRUCTIVE SURGERY

Friday, May 7, 1982

9:00 am-11:00 am Pine Room

CHAIRMAN: Section on Orthopaedics — Richard N.
Wrenn, M.D., Charlotte

Section on Plastic and Reconstructive
Surgery — Andrew W. Walker, M.D.,
Charlotte

9:00 am — Business Meeting — N.C. Orthopaedic
Scientific Session — Combined Meeting — Section on
Orthopaedics and Section on
Plastic and Reconstructive
Surgery

Topic: COMPLEX LOWER EXTREMITY
TRAUMA PROBLEMS

MODERATOR: Paul P. Gwyn, M.D., Winston-
Salem

9:50 am — TREATMENT OF COMPOUND
TIBIAL FRACTURES

Steve Lovejoy, Charlotte

10:05 am — THE USE OF THE EXTERNAL
FIXATOR FOR UNSTABLE TIBIAL
FRACTURES

David Kingery, M.D., Charlotte

10:20 am — MYOCUTANEOUS FLAPS

William Frank Mullis, M.D., Charlotte

10:35 am — FREE FLAP TRANSFER TO THE
LOWER EXTREMITY

John Fagg, M.D., Winston-Salem

10:50 am — ADJOURN

SECTION ON OTOLARYNGOLOGY AND MAXILLOFACIAL SURGERY

Friday, May 7, 1982

9:00 am-1:00 pm Banquet Room

New Members Club, Pinehurst Country Club

CHAIRMAN: Walter R. Sabiston, M.D., Kinston

PROGRAM CHAIRMAN: W. Fred McGuirt, M.D.,
Winston-Salem

Scientific Session:

BRAINSTEM EVOKED RESPONSE AUDIO
METRY

Grady Thomas, M.D., Chapel Hill

EXTENDED NASAL CRYOTHERAPY

Paul Geniec, High Point

TUMOR IMMUNOLOGY

Duke University Staff - (to be announced)

FACE-LIFT SURGERY

Ellison Edwards, M.D., Charlotte

EVALUATION AND MANAGEMENT OF THE
ALLERGIC HEADACHE

John Foust, M.D., Charlotte

SINGER-BLOM PROCEDURE

Fred McGuirt, M.D., Winston-Salem

Business Session:

Election of Officers, Delegate and Alternate
Delegate for 1982-83

SECTION ON PEDIATRICS

Friday, May 7, 1982

9:30 am Executive Committee Meeting — Parlor
#129

10:30 am-5:00 pm Crystal Room

CHAIRMAN: David T. Tayloe, M.D., Washington

10:30 am — Liaison Committee Meeting — N.C.
Pediatric Society

12:00 Noon — Lunch — Liaison Committee

Scientific Session:

2:00 pm-2:45 pm — CLINICAL AIDS USEFUL IN CARING FOR ADOLESCENTS

Robert B. Shearin, M.D., F.A.A.P., Associate Professor of Pediatrics and Director, Division of Adolescent Medicine, Georgetown University Medical Center, Washington

2:45 pm-3:20 pm — COMMON MENSTRUAL DISORDERS IN ADOLESCENTS

Rosalina Vaz, M.D., Assistant Professor of Pediatrics, Adolescent Clinic, Bowman Gray School of Medicine

3:30 pm-3:50 pm — HERPES SIMPLEX INFECTIONS IN THE ADOLESCENT

Peggy McCarthy, M.H.A., Clinical Research Scientist, Burroughs Wellcome Company

3:50 pm-4:00 pm — BREAK

4:00 pm-4:20 pm — TALKING WITH TEEN-AGERS

Sam Yancy, M.D., F.A.A.P., Private Practice of Pediatrics, Durham

Director, Youth Clinic, Duke Medical Center

4:20 pm-5:00 pm — DISORDERS OF PUBERTY: TOO MUCH TOO SOON OR TOO LITTLE TOO LATE

Louis W. Underwood, M.D., F.A.A.P., Professor of Pediatrics, Endocrine Division, University of North Carolina School of Medicine

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

SECTION ON EMERGENCY MEDICINE

Friday, May 7, 1982

11:30 am-5:00 pm Pine Room
CHAIRMAN: Daniel G. Sayers, M.D., Winston-Salem

Scientific Session:

11:20 am-12:00 Noon — Section Business Meeting
Election of Officers, Delegate and Alternate Delegate for 1982-83

12:00 Noon-1:00 pm — Board of Directors Meeting —
N.C. ACEP LUNCH

1:00 pm-2:00 pm — General Meeting N.C. ACEP

2:00 pm-3:00 pm — DIAGNOSIS AND THERAPEUTICS TRICYCLIC OVERDOSE

Bryan L. Sink, M.D., Resident in Emergency Medicine, Charlotte Memorial Hospital, Charlotte

3:00 pm-4:00 pm — PROCEDURE EMERGENCY PACING OF THE HEART

Thomas Hankins, M.D., Resident in Emergency Medicine, Bowman Gray School of Medicine and N.C. Baptist Hospital, Winston-Salem

4:00 pm-5:00 pm — EMERGENCY MEDICAL SYSTEMS TRAINING OF PARAMEDICAL PERSONNEL

E. Jackson Allison, Jr., M.D., Associate Professor & Chairman, ECU Department of Emergency Medicine; and Sandra S. Landis, R.N., EMS Project Coordinator and Lecturer, ECU Department of Emergency Medicine

SECTION ON ALLERGY AND CLINICAL IMMUNOLOGY

Friday, May 7, 1982

2:00 pm-5:00 pm Board Room
CHAIRMAN: J.A. Bardelas, M.D., High Point

2:00 pm-2:30 pm — NEW DRUGS IN THE TREATMENT OF ASTHMA

John Klimas, M.D., Charlotte

2:30 pm-3:00 pm — FOOD ALLERGIES — CURRENT CONCEPTS

Hugh Sampson, M.D., Duke University Medical Center

3:30 pm-4:00 pm — STINGING INSECT ALLERGY UPDATE

J.S. Atwater, Jr., M.D., Asheville

4:00 pm-4:30 pm — USE OF TOPICAL STEROIDS IN ASTHMA AND ALLERGIC RHINITIS

J.A. Bardelas, M.D., High Point

4:30 pm-5:00 pm — BUSINESS MEETING, North Carolina Medical Society Section of Allergy in conjunction with the North Carolina Society of Allergy and Clinical Immunology

SATURDAY, MAY 8, 1982

SECTION ON PATHOLOGY

Saturday, May 8, 1982

8:00 am-12:30 pm Resort Club
Pinehurst Country Club

CHAIRMAN: J. Ron Edwards, M.D., Raleigh

Scientific Session:

8:00 am-8:30 am — Business Meeting I and Introduction

8:30 am-9:30 am — PATHOLOGY OF DRUG INDUCED AND TOXIC DISEASES OF THE CARDIOVASCULAR SYSTEM

Col. Hugh A. McAllister USA(MC) AFIP, Washington, DC

9:30 am-9:45 pm — BREAK

9:45 am-10:30 am — FORBUS LECTURE

10:30 am - 11:30 am — MINISEMINAR — IMMUNOPEROXIDASE, APPLICATIONS IN SURGICAL PATHOLOGY

E. Ted Ahl, M.D., Department of Pathology, Bowman Gray School of Medicine

Byron Croker, M.D., Department of Pathology, Duke University School of Medicine

11:30 am-12:30 pm — Business Meeting II

SECTION ON ANESTHESIOLOGY

Saturday, May 8, 1982

8:00 am-1:00 pm Pine Room
CHAIRMAN: J. Leroy King, M.D., Raleigh

Scientific Session:

8:30 am — CALL TO ORDER

8:35 am-9:25 am — WHAT'S NEW IN OBSTETRICAL ANESTHESIA

Lloyd D. Redick, M.D., Professor of Anesthesiology, Duke Medical Center

9:30 am-10:10 am — CHLOROPROCAINE CONTROVERSY

Francis M. James, III, M.D., Professor of Anesthesiology, Bowman Gray School of Medicine, Chief of Obstetrical Anesthesia, Forsyth Medical Center

10:15 am-11:00 am — MEDICAL LEGAL ASPECTS OF OBSTETRICAL ANESTHESIA

David M. Dewan, M.D., Assistant Professor of Anesthesiology, Bowman Gray School of Medicine

11:00 am-11:45 am — QUESTIONS TO THE PANEL

11:45 am-12:00 Noon — COFFEE BREAK

12:00 Noon-1:00 pm — Business Meeting — North Carolina Society of Anesthesiologists — V.O. Roberson, M.D., President

SECTION ON NEUROLOGY & PSYCHIATRY

Saturday, May 8, 1982

9:00 am-12:00 Noon Azalea Bar
CHAIRMAN: Assed Meymandi, M.D., Fayetteville

Scientific Session:

9:00 am-9:45 am — WHAT YOU SHOULD KNOW ABOUT MEDICARE, MEDICAID AND OTHER THIRD PARTY PAYMENT

Joseph Russell, M.D., Carolina Clinic, Wilson

9:45 am-10:30 am — BORDERLINE PERSONALITY AND ATYPICAL PSYCHOSES — A CLINICIAN'S POINT OF VIEW

Eric Peterson, M.D., Highland Hospital, Asheville

10:30 am-10:45 am — BREAK

10:45 am-11:30 am — UPDATE: PSYCHOPHARMACOLOGY

Gordon Burnette, M.D., UNC Memorial Hospital, Chapel Hill

11:30 am-12:00 Noon — PANEL DISCUSSION: QUESTIONS AND ANSWERS

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

SECTION ON DERMATOLOGY

Saturday, May 8, 1982

9:00 am-12:00 Noon Crystal Room
CHAIRMAN: Charles E. Cummings, M.D., Asheville
SECRETARY-TREASURER: R. Wade Markham, M.D., High Point

Scientific Session:

9:00 am-10:00 am — CURRENT FINANCIAL AND ECONOMIC CONDITIONS

Mr. John G. Medlin, Jr., President and Chief Executive Officer of Wachovia Corporation

10:00 am-12:00 Noon — FUTURE OF DERMATOLOGY and INTERESTING CASE STUDIES

Richard Dobson, M.D., Chief of the Department of Dermatology, South Carolina Medical School, Charleston, S.C.

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

12:00 Noon — PICNIC — West Porch

SECTION ON OBSTETRICS & GYNOCLOGY

Saturday, May 8, 1982

9:00 am-12:00 Noon Board Room

CHAIRMAN: Talbot F. Parker, Jr., M.D., Goldsboro
Scientific Session:

UPDATE ON SENATE BILL 158, DEFINING THE BEGINNING OF LIFE

Robert G. Brame, M.D., Greenville

UPDATE ON NURSE-MIDWIFERY IN N.C., INCLUDING PLANNED HOME DELIVERIES

Robert G. Brame, M.D., Greenville

COMMITTEE ON MATERNAL HEALTH REPORT

Robert G. Brame, M.D., Greenville

N.C. MATERNAL MORTALITY COMMITTEE REPORT

W. Joseph May, M.D., Winston-Salem

REPORT ON LOCAL STUDY OF PERINATAL MORTALITY

W. Joseph May, M.D., Winston-Salem

STATEWIDE PERINATAL ADVISORY COUNCIL REPORT

Robert Dillard, M.D., Greenville

STANDARDS FOR SECONDARY CARE FACILITIES AS SUCH RELATES TO REGIONALIZATION OF PERINATAL CARE IN N.C.

Richard R. Nugent, M.D., Raleigh

A) PERINATAL CARE IN COUNTY HEALTH DEPARTMENT CLINICS AND COUNTY HOSPITALS AND CURRENT AND FUTURE FUNDING FOR SUCH

B) STATEWIDE MEDICAID FEE SCHEDULES RELATING TO OB/GYN IN N.C.

C) ANY OTHER MATTERS

Sarah T. Morrow, M.D., Secretary, Department of Human Resources

UPDATE ON AMBULATORY SURGERY AS RELATES TO OB/GYN IN N.C.

James E. Davis

Follow-up Report on Dr. Marion Johnson's Maternal AFT Studies

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

COMBINED SECTION MEETING

of

SECTION ON RADIOLOGY

and

SECTION ON NUCLEAR MEDICINE

Saturday, May 8, 1982

9:00 am-12:00 Noon Meeting House
Mid Pine Club, Southern Pines

CHAIRMAN: Luther E. Barnhardt, Jr., M.D., Asheville (Radiology)

CHAIRMAN: William H. McCartney, M.D., Chapel Hill (Nuclear Medicine)

PROGRAM CHAIRMAN: Edward Coleman, M.D., Durham

Scientific Session:

MODERATOR: Edward Coleman, M.D.

9:00 am-9:30 am — CORRELATIVE PANCREATIC IMAGING

Neil Wolfman, M.D., Winston-Salem

9:30 am-10:00 am — PERCUTANEOUS ABSCESS DRAINAGE

Paul Jaques, M.D., Chapel Hill

10:00 am-10:30 am — TRANSLUMINAL ANGIOPLASTY

Michael Weaver, M.D., Greenville

10:30 am-11:00 am — DISCUSSION/COFFEE BREAK

11:00 am-11:30 am — NUCLEAR CARDIOLOGY IN A RADIOLOGY PRACTICE

Robert Schaaf, M.D., Raleigh

11:30 am-12:00 Noon — CURRENT STATUS OF DIGITAL ANGIOGRAPHY

Kerry Ford, M.D., Durham

12:00 Noon-12:30 pm — OVERVIEW OF NUCLEAR MAGNETIC RESONANCE IMAGING

Ed Easton, M.D., Charlotte

Business Session:

Election of Officers, Delegate and Alternate Delegate for each Specialty Section for the year 1982-83

SECTION ON NEUROLOGICAL SURGERY**Saturday, May 8, 1982**

1:00 pm-5:00 pm Crystal Room

CHAIRMAN: Robert E. Price, Jr., M.D., Durham

1:00 pm — Luncheon — Crystal Room

2:00 pm — Scientific Session

4:00 pm — Business Session

Election of Officers, Delegate and Alternate Delegate for 1982-83

NORTH CAROLINA SOCIETY

of

**PLASTIC, MAXILLOFACIAL & RECONSTRUCTIVE SURGEONS
MID PINES RESORT****Friday, May 7, 1982**10:00 am-1:00 pm Meeting House
Mid Pines Club, Southern Pines**Scientific Session:**

* Jerome E. Adamson, M.D., Professor, Plastic Surgery, Eastern Virginia Medical School

Kenneth L. Pickrell, M.D., Professor Emeritus, Duke University Medical Center

10:00 am-10:30 am — RHINOPLASTY, IMPORTANCE OF TIP RECONSTRUCTION

Jerome E. Adamson, M.D.

10:30 am-11:45 am — PANEL — POST RHINOPLASTY PROBLEMS

MODERATOR: Paul Gwyn, M.D.

Jerome E. Adamson, M.D.

Kenneth L. Pickrell, M.D.

Problem Cases Presented By Members

11:45 am-12:00 Noon — BREAK

12:00 Noon-1:00 pm — PANEL — THE DIFFICULT NOSE

MODERATOR: Paul Gwyn, M.D.

Jerome E. Adamson, M.D.

Kenneth L. Pickrell, M.D.

Problem Cases Presented By Members

Saturday, May 8, 1982

8:30 am-11:30 am — Annual Business Meeting

Andrew W. Walker, M.D., presiding

Special Reports by: Jerome E. Adamson, M.D.

* Sponsored by the American Society for Aesthetic Plastic Surgeons, Inc.

AUXILIARY**FIFTY-NINTH ANNUAL CONVENTION**

of

NORTH CAROLINA**MEDICAL SOCIETY AUXILIARY****Thursday, May 6, 1982 — Saturday, May 8, 1982****Convention Headquarters:**

Sheraton Convention Center, Southern Pines

Convention Committee:

Mrs. Frank W. Leak (Betty)

Mrs. H. Maxwell Morrison (Myrtis)

THURSDAY, MAY 6

9:00 am-4:00 pm — REGISTRATION — Sheraton Convention Center Lobby

10:00 am — Auxiliary President Reports to Medical Society House of Delegates, Pinehurst Hotel, Pinehurst

11:00 am-12:30 pm — AUXILIARY — Executive Committee — Room B

1:30 pm-3:30 pm — 1981-1982 BOARD OF DIRECTORS' MEETING — Room B

3:30 pm-4:30 pm — Treasurers' Workshop on Membership — State First Vice President, District Councilors, County Presidents/Presidents-Elect

FRIDAY, MAY 7

8:00 am-4:00 pm — REGISTRATION — Sheraton Convention Center Lobby

7:45 am — Breakfast meeting for District Councilors

8:00 am-9:00 am — Set-Up County Displays in Lobby

9:00 am — HOUSE OF DELEGATES — Room A & B

10:15 am — BREAK

10:30 am-12:00 Noon — ANNUAL MEETING — Room A & B

12:30 pm — LUNCHEON — COUNTRY CLUB OF N.C. — 1981-1982 President's Farewell

4:00 pm-5:30 pm — AWARDS RECEPTION — Room A

Dr. and Mrs. Hampton Hubbard

Dr. and Mrs. O. Raymond Hunt

SATURDAY, MAY 8

7:45 am-9:00 am — 1982-1983 BOARD OF DIRECTORS Breakfast Meeting

9:00 am-12:15 pm — THE 1982-1983 AUXILIARY PRESIDENT PRESENTS . . .

9:00 am-11:00 am — "FAMILIES COPING IN THE 80's; PREVENTING BURN-OUT, BREAK-DOWN AND DISINTEGRATION."

H. Stephen Glenn, Ph.D., Lexington, S.C.

11:15 am-12:15 pm — ESCAPES AND RELAXATIONS

Martha Funk, Winston-Salem

12:15 pm-1:00pm — SOCIAL HOUR

1:00 pm — 1982-1983 PRESIDENT'S LUNCHEON

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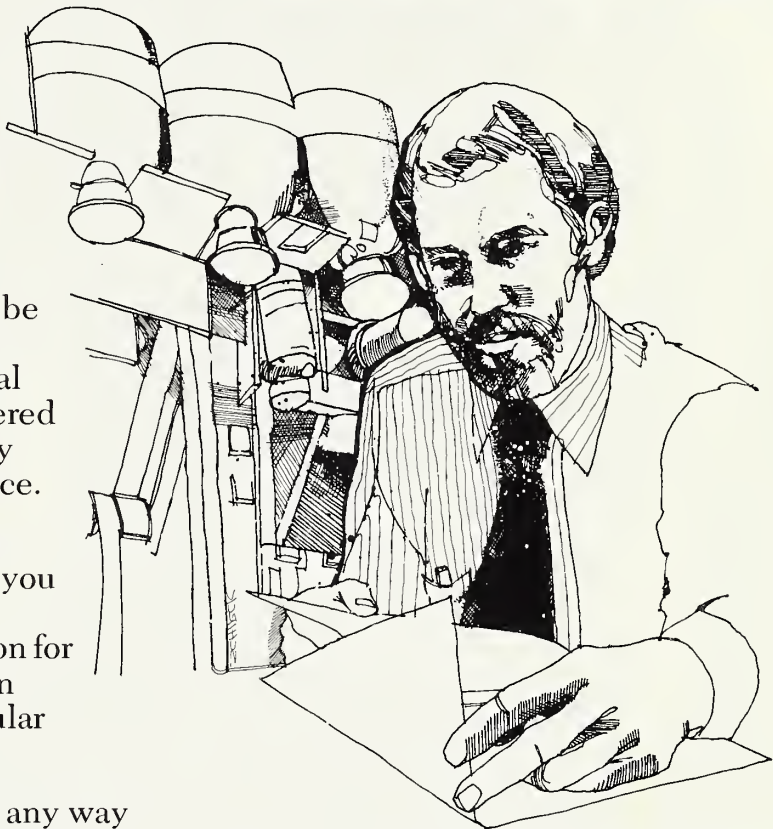
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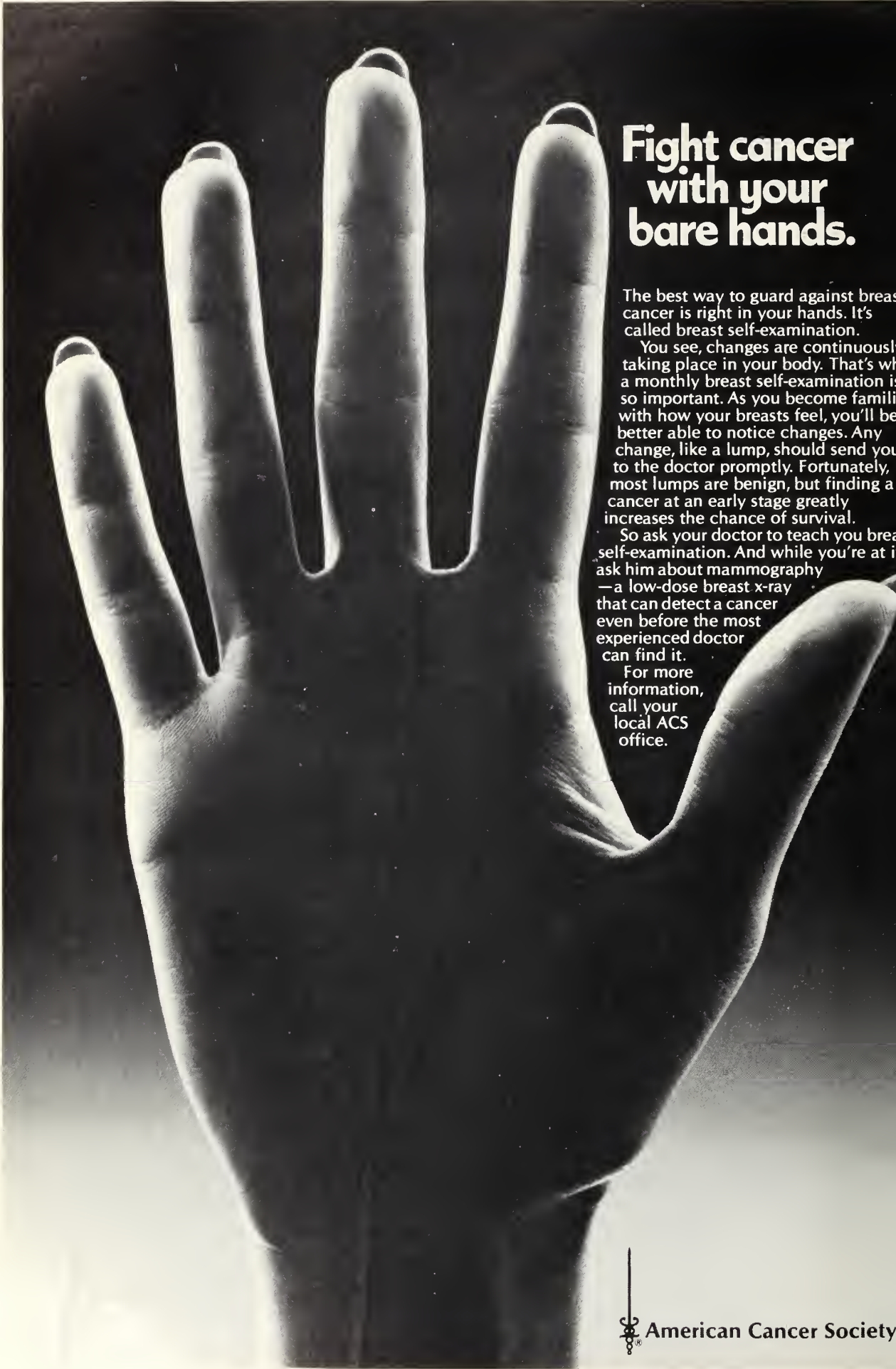
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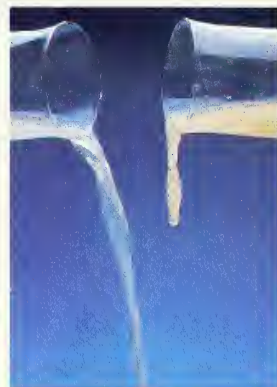
Among the general study population who expressed a preference, 59.6% (31/52)† preferred BranLax overall, effectiveness of BranLax was favored by 57.6% (19/33),† taste was preferred by 58.8% (30/51)† and convenience of preparing BranLax was favored by 62.5% (20/32).†

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urkitt, D.P. and Meisner, P.: How to manage constipation with high-fiber diet, *Geriatrics* 34:33-40, Feb. 1979. Statistically significant at the .05 level. While this difference is not statistically significant, there was a definite directional superiority in favor of BranLax.

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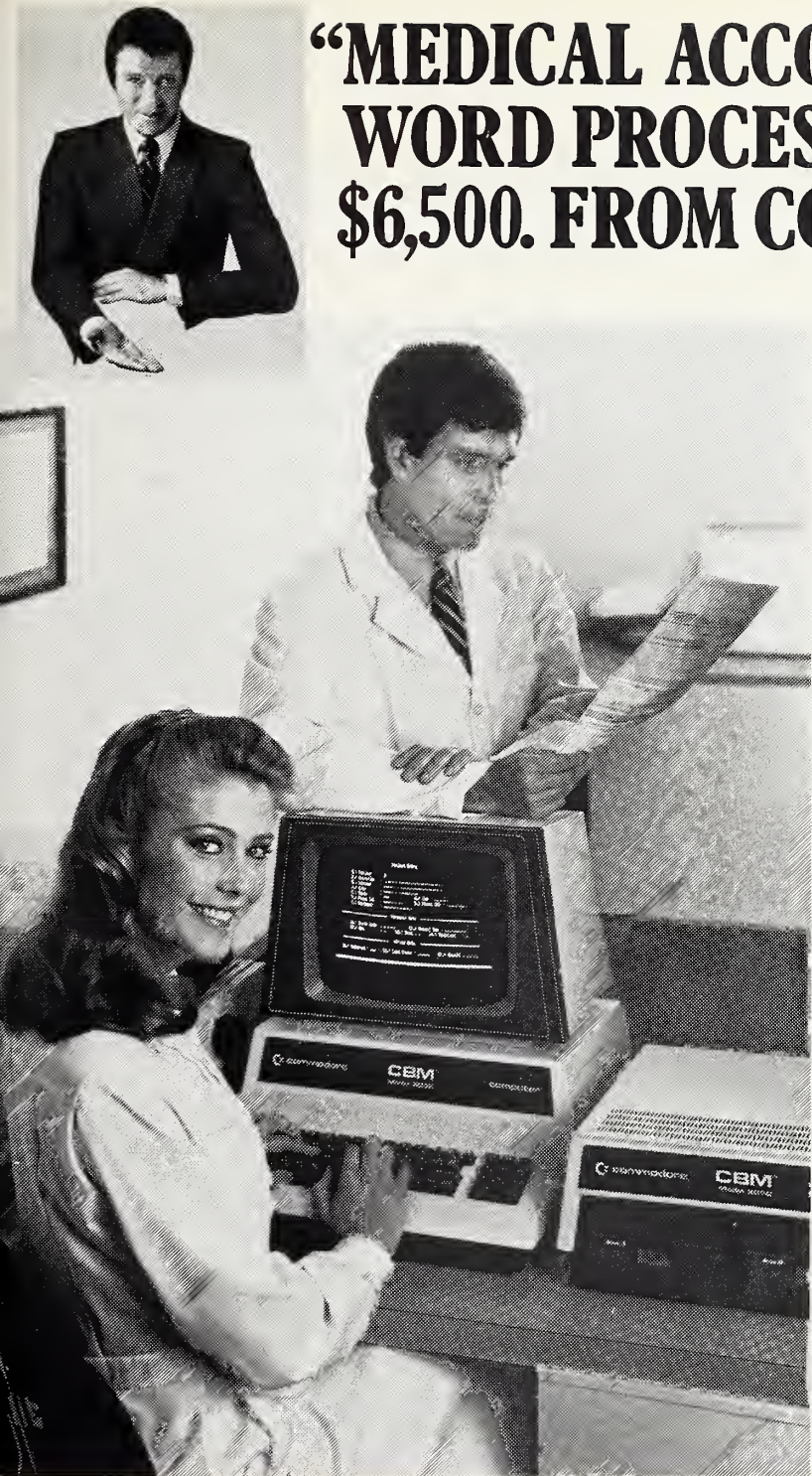
Capsules/Tablets: Each capsule/tablet contains 500 mg acetaminophen, 30 mg pseudoephedrine HCl, 2 mg chlorpheniramine maleate, 10 mg dextromethorphan HBr.

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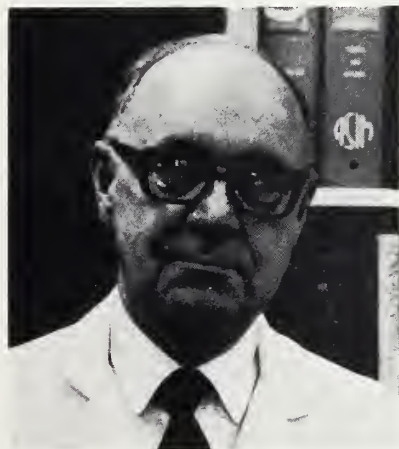
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*PATIENT CARE Magazine—Outlook 1977, "Face-Off: Cost Containment vs. Chaos," January 1, 1977

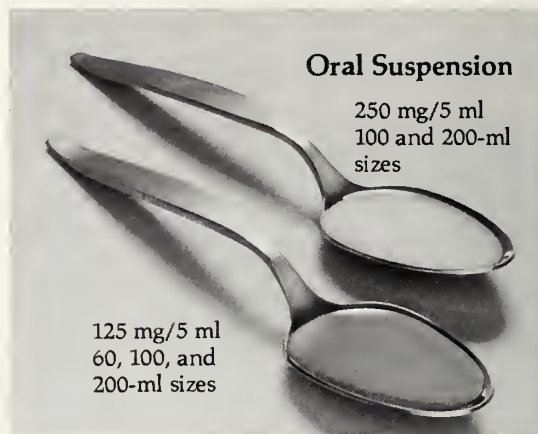
Lyle CB, et al. "Practice habits in a group of eight internists," ANNALS OF INTERNAL MEDICINE 84 (May 1976), 594-601.

Schroeder SA, et al. "Use of laboratory tests and pharmaceuticals: variation among physicians and effect of cost audit on subsequent use," JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION 225 (Aug. 20, 1973), 969-73.



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Accuracy in Diagnosis and Sizing Abdominal Aortic Aneurysm

Daniel Domjan, M.D., Francis Robicsek, M.D., Harry K. Daugherty, M.D., Joseph W. Cook, M.D., Jay G. Selle, M.D., and Philip J. Hess, M.D.

ABSTRACT The value of different diagnostic studies in patients with abdominal aortic aneurysms was studied in 623 cases. Physical examination, abdominal x-rays and angiography were done in all patients, while ultrasound examination and computerized tomographic (CT) scanning were performed in our last 60 cases. Physical examination and abdominal x-rays were least accurate in defining abdominal aortic aneurysms. Angiography and ultrasound exam were 98% accurate in identifying the lesion, but aneurysm size was more accurately determined with ultrasound. CT scan was 100% accurate in diagnosing the lesion and estimating its size.

MOST patients with abdominal aortic aneurysm are asymptomatic, though some notice a pulsating mass. The majority of cases are recognized during routine physical examination. Other methods of assessing abdominal aortic aneurysms include anteroposterior and lateral x-rays, tomograms, aortography, ultrasound, radionuclide angiography and computed tomography.¹

Until the advent of ultrasound, angiography was the accepted technique for diagnosing abdominal aortic aneurysms. In recent years angiography has been limited to specific indications, such as the definition of renal or peripheral vascular disease.²

In 1971 we reported on the relative merits of physical examination, abdominal x-rays, and aortography in the diagnosis of 218 patients with proven abdominal aortic aneurysm.³ Several specific diagnostic angiographic signs were also described that improved the accuracy of angiographic diagnosis of the presence of

abdominal aortic aneurysm to 98%. These signs include:

1. *Hesitation* in the passage of contrast material through a localized segment of abdominal aorta.
2. *Localized irregularity* of an otherwise normal aorta.
3. *Absence of branches* between the renal artery and the aortic bifurcation.
4. *Sharp angulation* of the aorta.
5. *Straight line* pattern in a localized segment of an otherwise heavily arteriosclerotic aorta.
6. *Absence of tapering* of the aorta at its distal portion.

Since 1971 we have resected abdominal aneurysms in 623 additional patients, 60 of whom were also studied with ultrasound and CT scan. Since the key prognostic factor in an abdominal aortic aneurysm is its size, estimates of aneurysm size with the various diagnostic tests were compared to measurements at surgery.

The findings reported in 1971 have been confirmed in our experience with abdominal aortic aneurysms over the past 10 years. We found that physical exam alone was nearly 70% accurate in predicting the presence of abdominal aortic

aneurysm. There was, however, a 15% rate of false positive diagnosis, attributable either to tortuosity of the aorta or to retroperitoneal tumors. We also found that estimates of aneurysm size were grossly inaccurate in obese patients.

Conventional abdominal radiograms predicted the presence of the aneurysm in nearly 70% of patients (Figure 1). When curvilinear calcifications outlined both margins of the aneurysm, estimation of aneurysm size was fairly accurate. Such calcifications were present, however, in only 55% of the cases. Angiography, interpreted with the aid of the secondary signs listed above, has remained 98% diagnostic for the presence of the lesion. It has the disadvantage of being invasive and expensive but the additional data provided has been crucial in some cases. Although renal arterial involvement with abdominal aneurysm is rare,⁴ it was found in 5% of this series. The angiogram has been useful in outlining the anatomy of accessory renal arteries and the presence of renal artery stenosis.⁵ Absence or occlusion of the superior mesenteric artery was noted in four of our cases, reimplantation of the inferior mesenteric artery averting

From the Department of Thoracic and Cardiovascular Surgery, Charlotte Memorial Hospital and Medical Center, Charlotte, N.C.

Reprint requests to Dr. Domjan at Sanger Clinic, P.O. Box 220868, 1960 Randolph Road, Charlotte, N.C. 28207

Methods of Diagnosis of Abdominal Aortic Aneurysm

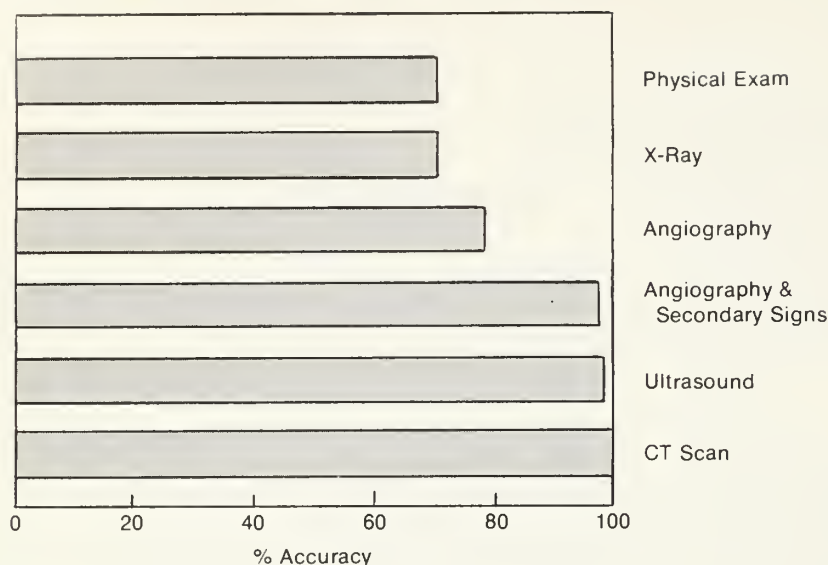


Figure 1

the potential disaster of massive bowel necrosis. Peripheral vascular disease is easily demonstrated on the angiogram and appropriate action planned rather than necessitating further dissection at surgery.

The advent of ultrasound has been a great advance in the diagnosis of abdominal aortic aneurysms. It is a non-invasive, relatively inexpensive and highly accurate study which demonstrates the presence and the size of the aneurysm in nearly 100% of cases (Figure 1). Its only limitation is the presence of bowel gas and barium that can interfere. In our 60 cases, interference prevented diagnosis in only one instance. Prediction of aneurysm size was accurate to within 1 cm (Figure 2).

CT scanning has been as accurate (virtually 100%) as ultrasonic examination and has the advantage of requiring no preparation (Figure 1). The study is not affected by bowel gas. The CT scan, however, is three times as costly as ultrasound and there is some exposure to radiation.

Since ultrasound is less costly, more easily available and provides similar information, CT scanning is unnecessary for the diagnosis of abdominal aortic aneurysms unless

Methods of Estimation of Aneurysm Size

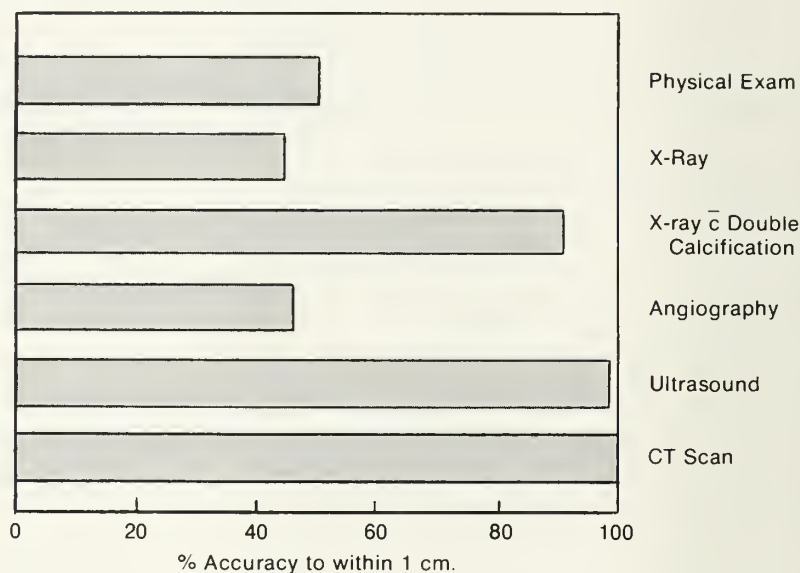


Figure 2

the ultrasonic study is technically unsatisfactory.

If the diagnosis of aneurysm of the abdominal aorta cannot be made with absolute certainty with physical and conventional radiographic examination, it should be reached with ultrasound, which is also a reliable screening test in all cases where palpatory, auscultatory and x-ray signs are absent. We further recommend that even when the diagnosis is established with certainty, the extent of the lesion, the status of arterial runoff, and the condition of the visceral arteries should be determined by angiography in every case of unruptured aneurysm of the abdominal aorta.

References

1. Hufnagel CA. CT scanning: a new method for the diagnosis of abdominal aortic aneurysms. *J Cardiovasc Surg* 1979;20:511-16.
2. Cooley DA, Wukash DC. Techniques in vascular surgery. Philadelphia: W. B. Saunders, 1979:54.
3. Robicsek F, Daugherty HK, et al. The value of angiography in the diagnosis of unruptured aneurysms of the abdominal aorta. *Ann Thorac Surg* 1971;11:538-50.
4. Schwartz SI, Shires TB, et al. Principles of surgery, 3rd ed. New York: McGraw Hill, 1979:959.
5. Brewster DC, Retana A, et al. Angiography in the management of aneurysms of the abdominal aorta: its value and safety. *N Engl J Med* 1975;292:822-25.

PARACELSUS [1493?-1541]

If the physician is to understand the correct meaning of health, he must know that there are more than a hundred, indeed more than a thousand, kinds of stomach; consequently, if you gather a thousand persons, each of them will have a different kind of digestion, each unlike the others.

Three Books on Surgery, Bk. III, Foreword (tr. by Norbert Guterman)

Effect of Epidural Morphine on Respiratory Function and Hemodynamic Stability

Enid R. Kafer, M.D., J. Tony Brown, Gregory W. Ross, B.Sc., and Jawahar N. Ghia, M.D.

ABSTRACT We examined the relief of pain, hemodynamic response and respiratory function during the 24 hours following the administration of morphine epidurally 0.1 mg/kg body weight in 12 patients (mean age $44.3 \pm \text{SEM } 3.3$ years) with severe chronic low back pain (duration $69 \pm \text{SEM } 29$ months). Pain was relieved satisfactorily in 10/12 patients within $29.4 \pm \text{SEM } 14.0$ minutes for 16-48 hours. Blood pressure and heart rate measured during the first six hours and 22-24 hours after injection did not change from control. During the first three hours after injection vital capacity, $92 \pm 4\%$ control ($p < 0.05$), minute ventilation, $78 \pm 5\%$ control ($p < 0.02$) and tidal volume $80 \pm 3\%$ control ($p < 0.02$) were reduced. The incidences of nausea, vomiting and urinary retention were low but pruritus developed in six patients. Epidural morphine provides effective analgesia suitable in the rehabilitation of patients with severe back pain. However, continuous observation is essential during the first 24 hours after injection in order to detect possible respiratory depression.

OPIATE receptors have been demonstrated in the pain pathways in the spinal cord and the thalamus¹⁻⁶ as well as in brain stem areas associated with respiratory control and have afferent connections with peripheral chemoreceptors and pulmonary vagal receptors.^{6,7} In experimental animals administration of opiates or enkephalins into the cerebrospinal fluid blocks pain transmission in the dorsal horn but leaves the proprioceptive and motor pathways intact.⁸⁻¹¹ The administration of lumbar epidural or subarachnoid opiates, including morphine, to man results in prolonged, selective segmental analgesia without changes in motor or cardiovascular autonomic function.¹²⁻¹⁴ Epidural opiates are effective in the management of acute postoperative and posttraumatic pain, ischemic pain, pain associated

with pelvic and spinal carcinoma, and severe low back pain.^{13,14}

However, several case reports document severe respiratory depression following epidural morphine or meperidine or subarachnoid morphine.¹⁵⁻²¹ Most of these were patients over 60 years of age who received opiates for postoperative pain;¹⁵⁻²⁰ the respiratory depression from either epidural¹⁹⁻²¹ or subarachnoid morphine^{15,16,18,20} occurred 4-10 hours after injection. Respiratory depression but not analgesia was reversed by naloxone.^{16,17,19,20}

We examined pain relief, hemodynamic response, and respiratory function for 24 hours after the epidural administration of morphine (0.1 mg/kg body weight) for severe low back pain. Our goals were to assess the efficacy of epidural morphine in pain relief and to examine the effects on blood pressure, heart rate, neuromotor function of the respiratory system and minute ventilation, tidal volume and respiratory frequency. This study afforded the opportunity to examine the effects of epidural morphine on hemody-

namic stability and respiratory function in the absence of evolving postsurgical or posttraumatic response. Hemodynamic stability, minute ventilation and neuromotor function of the respiratory system have not been previously assessed systematically during the 24 hours following epidural morphine.

METHODS AND PATIENTS

The effects of 0.1 mg/kg body weight epidural morphine (7 mg/70 kg) administered for severe chronic back pain on hemodynamic stability and respiratory function were examined for 24 hours following epidural morphine. The protocol was approved by the Human Rights Committee of the School of Medicine of the University of North Carolina at Chapel Hill and informed consent was obtained from each patient. The patients were attending the Pain Clinic of the North Carolina Memorial Hospital (NCMH) for management of severe back pain. The morphine was administered once during their rehabilitation program. Except for the severe back pain the patients

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were in their normal state of health and did not have severe organ system disease, psychiatric disorders, bleeding diathesis or back infection.

The mean age of the patients was $44.3 \pm \text{SEM } 3.3$ years (range 29-60) and low back pain had been present for $69 \pm \text{SEM } 29$ months. Two patients were hypertensive and one had obstructive pulmonary disease (FEV_1/VC of 35 percent). The pain was graded on a scale of 0 to 3 and the average was $2.3 \pm \text{SEM } 0.2$.

Administration of epidural morphine: All patients were allowed nothing by mouth for six hours before injection. A cannula was inserted into an arm vein and Ringer's lactate solution begun. With the patient in the lateral decubitus or sitting position an epidural needle (18 gauge, 9 cm Hustead or Crawford epidural needle) was inserted into the 3-4 or 4-5 lumbar interspace. After identification of the epidural space by "loss of resistance" and absence of cerebrospinal fluid, 0.1 mg/kg body weight morphine was injected in 30 seconds into the epidural space. The patient was then placed in the semi-recumbent position. The morphine preparation was free of preservatives (A. H. Robins, Richmond, Va.) and contained per ml morphine sulphate 0.5 mg, sodium chloride 9.0 mg and water for injection to 1 ml. The preparation was protected from light.

After six hours of postinjection observation in the Pain Clinic all patients were admitted to our outpatient motel for overnight observation. At discharge from the Pain Clinic 24 hours after injection the patients were given written and verbal instructions to avoid alcohol, other potent drugs, and driving for 24 hours. Each patient was accompanied home by a responsible adult

and instructed to report to the NCMH Emergency Room or call a Pain Clinic physician in the event of any untoward symptoms.

The patients were seen in the NCMH Pain Clinic at two week intervals for a month, and then every two months for six months thereafter.

Evaluation of pain and pain relief: Severity of pain was graded on a four point scale, 0 = no pain, 1 = mild pain, 2 = moderate pain and 3 = severe pain. Severe pain prevented patients from performing their normal occupations. The evaluation of the analgesic response to epidural morphine included onset of analgesia (latency of onset), time from injection to effective relief of pain (latency of pain relief) and duration of analgesia. Relief of pain was scored on a five point scale by questioning the patient with 0 = worsening of pain, 1 = no change, 2 = some relief, 3 = moderate relief, and 4 = complete relief.

Hemodynamic measurements: Blood pressure and heart rate were measured during the control period prior to injection, at five-minute intervals during the first hour, and hourly up to six hours and 22-24 hours after injection. Blood pressure and heart rate were measured non-invasively using an automatic blood pressure monitor (Sensomat, Biochem International, Milwaukee, Wis.)^{22,23} while the patients were in the semi-recumbent position.

Respiratory measurements: The vital capacity (VC) and forced expiratory volume in one second (FEV_1) were measured on a 9-liter lightweight Godart spirometer (Bilthoven, Holland). All the measurements were performed in triplicate and of each set of three the largest was used.²⁴ Each set was examined for repro-

ducibility and variation between the two best measurements did not exceed 5%. The control values were expressed in liters, BTPS, and as percent predicted,²⁵ and the post-injection values were expressed in liters, BTPS, and as a percent of control.

Resting minute ventilation, tidal volume and respiratory frequency were measured on a 120 liter Warren Collins gasometer (Braintree, Mass.) with patients breathing via a low resistance one-way valve. Data were collected for two periods of 2-3 minutes and each pair of values averaged. The volumes were corrected to BTPS.

Respiratory measurements were made during the control period, hourly for three hours after injection and 22-24 hours after injection. The VC and FEV were measured with the patients in the seated position and resting minute ventilation was measured with the patients in the semi-recumbent position.

Results are expressed as mean \pm SEM.

RESULTS

Pain relief: Pain relief was satisfactory in degree and duration in 10 of 12 patients, although the ranges of latency to effective pain relief and duration of pain relief were wide. The average latency to effective pain relief was 29.4 ± 14 minutes and the range 3-180 minutes. In nine of the 12 patients latency to onset of relief was within 15 minutes of injection. In 10 of the 12 subjects pain was relieved from 16 to 48 hours and in two it was only one hour.

Two patients developed nausea and/or vomiting. Two male patients required catheterization of bladder for urinary retention. Half the patients had pruritus over the body but

TABLE I: Effects of 0.1 mg/kg of epidural morphine on heart rate, blood pressure, minute ventilation, respiratory frequency and tidal volume (mean \pm SEM)

Variable	Control Value	One Hour Postinjection	Two Hours Postinjection	Three Hours Postinjection	22-24 Hours Postinjection
Heart Rate (beats/minute), n = 12	85 ± 3.6	79 ± 3.4	74 ± 3.3	75 ± 3.7	84 ± 3.9
Systolic Pressure (mmHg), n = 12	139 ± 5.3	139 ± 5.3	139 ± 5.7	136 ± 5.2	132 ± 4.8
Diastolic Pressure (mmHg), n = 12	83 ± 3.6	84 ± 3.3	80 ± 3.7	79 ± 3.6	80 ± 3.8
Minute Ventilation (BTPS), n = 5	10.3 ± 0.7	9.2 ± 0.6	8.9 ± 0.4	8.2 ± 0.2	10.3 ± 0.3
Tidal Volume ml, BTPS, n = 5	651 ± 60	551 ± 37	529 ± 42	507 ± 31	567 ± 43
Breaths/Minute, n = 5	16.2 ± 1.3	16.9 ± 1.2	17.1 ± 1.5	16.5 ± 1.2	18.5 ± 1.4

in the majority it was mild and did not prevent sleeping.

Blood pressure and heart rate: The preinjection systolic and diastolic blood pressures were 139 ± 5.3 and 83 ± 3.6 mm Hg and the heart rate was 85 ± 3.6 per minute. Blood pressure and heart rate during the first six hours after injection were not significantly different from the preinjection or the 22-24 hour postinjection values (Table I).

Respiratory function: Minute ventilation, tidal volume and respiratory frequency were measured in five patients (Table I). The mean preinjection minute ventilation was 10.3 ± 0.7 liters/minute, tidal volume was 651 ± 60 ml and respiratory frequency was 16.2 ± 1.3 breaths per minute. Although there were reductions in minute ventilation and tidal volume the postinjection values of minute ventilation, tidal volume and respiratory frequency at 1, 2, and 3 hours were not significantly different from the preinjection values. However, the hours after injection at which maximal reduction in minute ventilation and tidal volume occurred in each patient varied between 1-3 hours. The lowest mean minute ventilation was 8.1 ± 0.2 liters/minute ($78 \pm 5.4\%$ control) and tidal volume was 501 ± 34 ml ($80 \pm 3.1\%$). Both of these values were significantly different from their respective control values at $P < 0.02$ level (Paired t test). The respiratory frequency did not change and therefore any decrease in minute ventilation was the result of reduction in tidal volume.

The VC and FEV₁ were measured in 8 of the 12 patients. The mean control VC was 3.9 ± 0.2 liters (84 ± 3 percent predicted) and the mean control FEV₁ was 3.0 ± 0.3 liters (89 ± 11 percent predicted) (Table II). The VC and FEV₁ were 3.4 and 1.2 liters, respectively, in the patient with obstructive lung disease. During the first three hours in 7 of 8 patients the VC was reduced and the mean decrease was 0.41 ± 0.10 liter (range 0.110-0.920 liter). However, the hours after injection at which the maximal reduction in VC occurred varied between 1 and 3 hours. Therefore, the mean VCs and FEV₁s at 1, 2, and 3 hours

TABLE II: Effect of 0.1 mg/kg body weight epidural morphine for chronic back pain on vital capacity and forced expiratory volume in one second

Variable	Control Value lter, BTPS	One Hour Post-injection % control	Two Hours Post-injection % control	Three Hours Post-injection % control	22-24 Hours Post-injection % control
Vital Capacity	3.9 ± 0.2	95.8 ± 3.8	97.6 ± 3.0	95.1 ± 2.4	97.0 ± 2.7
FEV ₁	3.0 ± 0.3	96.0 ± 5.2	98.3 ± 4.7	95.6 ± 3.9	95.4 ± 3.7
8 Patients, mean \pm SEM					

postinjection were not significantly different from the preinjection values but the mean lowest VC during the first 3 hours which was 3.6 ± 0.3 liters ($92 \pm 4\%$ control) was significantly less than the preinjection value ($P < 0.05$ paired one tailed t test). At 24 hours the VC and FEV₁ were not significantly different from the control values.

The FEV₁ in the patient with obstructive pulmonary disease increased at one hour postinjection from 1.2 to 1.3 liters and at two hours postinjection had increased to 1.4 liters (14% increase). After 22-24 hours the FEV₁ had returned to the preinjection value of 1.2 liters.

DISCUSSION

Analgesia and respiratory function: Pain relief has always been bought at a price.²⁶ Parenteral narcotic analgesic depress ventilation,²⁷ inhibit sighs,²⁸ and impair both the chemical regulation of ventilation²⁹ and the neural reflex increase in respiratory drive in response to mechanical loads.^{30,31} Regional anesthesia, such as epidural analgesia, does not impair the central respiratory control systems but blocks the sympathetic efferent system and may impair the respiratory neuromotor system. However, due to the complexity of administration and the requirements of monitoring, epidural analgesia has not been extensively utilized in the management of severe pain such as postoperative pain. Therefore, epidural opiates appeared to offer major advantages as a result of the prolonged selective segmental analgesia and the apparent freedom from serious side effects. However, reports of severe respiratory depression following subarachnoid and epidural opiates¹⁵⁻²¹ have necessitated an examination

of the respiratory pharmacology and pharmacokinetics of epidural opiates.

Opiate receptors have been demonstrated in large numbers in afferent pathways from the peripheral chemoreceptors (nucleus tractus solitarius) and in the afferent pathways from the pulmonary vagal receptors.⁵⁻⁷ These observations therefore suggest a neuropharmacologic mechanism for the reduced ventilatory response to hypoxemia²⁹ by blockade of afferents from the peripheral chemoreceptors. Blockade of vagal afferents from the pulmonary stretch receptors has been demonstrated to reduce the ventilatory response to CO₂ by abolishing the increase in respiratory frequency.³² We therefore postulate that opiates may also block the afferent pathway from pulmonary stretch receptors and therefore abolish or reduce the increase in respiratory frequency in response to CO₂. The contribution of this mechanism to the reduction in the ventilatory response to CO₂ in man has not been assessed quantitatively. Many opiate receptors are also present in the areas of the vagal afferent nuclei concerned with the synaptic transmission of impulses by fine fibers. This observation provides an explanation of the relief of dyspnea by opiates where the dyspnea is the result of pulmonary edema. The J receptors of the lung which are stimulated in pulmonary edema transmit afferents to the neuraxis via fine fibers.³³ The direct administration of opiates in the cisterna magna and the fourth ventricle results in respiratory depression at doses only a fraction of those administered systemically.³⁴

Following epidural morphine there is a rapid rise in the lumbar cerebrospinal fluid and blood con-

centration of the drug.^{14,21} We postulate that the blood concentration, which peaks within 15 minutes, results in a redistribution to the brain and subsequent mild central respiratory depression. We also postulate that mass movement of the CSF due to coughing, straining and changes in posture may result in high concentrations in the cisterna magna, albeit unpredictably. Diffusion in the CSF to the cisterna magna may also transport opiates to the brain stem. Therefore, we predict two phases of depression of respiratory control: an early mild depression the result of blood redistribution and a later, less predictable depression the result of mass movement or diffusion in the CSF.

Analgesic response to epidural morphine: The duration and quality of relief of severe chronic pain in the majority of our patients was good. Magora and associates¹⁴ reported that 52% of 17 patients (21 injections) obtained good, 33% fair, and 14% poor relief from pain after 2-3 mg of epidural morphine. In our study a higher dose of epidural morphine was administered and was combined with a rehabilitation program, a therapeutic regimen we consider effective.

The incidences of nausea, vomiting and urinary retention were low. Nausea and vomiting were less frequent with epidural morphine than with the same dose given intravenously.³⁵ We also observed that the incidence of nausea and vomiting was dose-related and could be minimized by using the lowest effective analgesic dose. The incidence of urinary retention is similar to that reported in other series.³⁵

Pruritus was common but in most patients it did not interfere with activity or sleep. Itching has been previously reported after epidural morphine³⁵ and was attributed to the release of histamine from mast cells.³⁶ However, antihistamines are therapeutically ineffective. Intracisternal or intramedullary injection of morphine in animals results in a scratch response^{37,38} and naloxone controls pruritus in systemic diseases.^{39,40} Therefore, al-

though Reiz and Westburg attributed the pruritus following epidural morphine to the preservatives, it appears to result from the action of morphine on the central nervous system. A preservative-free preparation was used in our study.

No transient clinical neurologic signs were observed 24 hours after epidural morphine or at later examinations.

Respiratory and cardiovascular function: Although our series was small, age range was wide and patients with hypertension and chronic obstructive pulmonary disease were included. Respiratory failure was not observed, blood pressure and heart rate were stable and there was no evidence of depression of minute ventilation or alteration in ventilatory pattern. The reduction in minute ventilation and tidal volume were probably the result of a mild increase in the preinjection minute ventilation and tidal volume because of pain and anxiety about the injection.

We have shown that 0.1 mg/kg body weight epidural morphine in chronic pain patients results in mild impairment in the respiratory neuromotor function during the first three hours as evidenced by the reduction in VC. In normal adults the maximal inspiratory volume (total lung capacity, TLC) is determined by the balance of inspiratory muscle force opposing the elastic forces of the chest wall and the lung. In adults the volume at maximal expiration, residual volume (RV) is determined by flow limitation or airways closure.^{41,42} Since there is no evidence that low-dose morphine alters the elastic forces of the chest wall or lungs we would conclude that any decrease in maximal inspiratory volume is the result of reduced inspiratory muscle force. Similarly, there is no evidence that morphine increases the volume at which flow limitation or airway closure occurs and therefore that it decreases VC as a result of an increase in RV. However, since we did not measure RV we cannot exclude this possibility. Nevertheless, we postulate the most probable mechanism for a decrease in VC is a reduction in the maximum voluntary inspiratory

muscle force. The possible sites of action of opiates which might account for this include the motor cortex because this is a voluntary maneuver and the lower motor neurons of inspiratory muscles. There is no evidence that low doses of morphine impair neuromuscular transmission. Therefore, any impairment of inspiratory muscle force is probably due to action on the motor cortex or spinal cord.

The effect of epidural morphine on the neuromotor function of the respiratory system in the absence of postoperative pain¹³ has not been previously examined. The demonstration that epidural morphine results in a mild depression of neuromotor function is therefore of interest.

Although these data are reassuring, further assessment with an examination of the effect of epidural morphine on the chemical regulation of ventilation and the neural reflex responses to mechanical loads are essential to our understanding.

Variation in analgesic and respiratory responses to epidural morphine: A notable feature of the analgesia obtained and the reduction in vital capacity found was the variations between patients in latency to effective pain relief, and the timing and magnitude of reduction in VC. Mechanisms which might account for these variations include: 1) variations in the potency of the morphine preparation and the dose administered; 2) differences in the rate of absorption from the epidural space as a result of variations in epidural blood flow and rate of diffusion into the cerebrospinal fluid; 3) differences in the rate and distribution in the brain due to regional blood flow and 4) undefined factors which modify the "sensitivity" of receptors to morphine and the response of the respiratory neuromotor system and the patient to morphine analgesia. Because of the importance of the dose-response relationship for the efficacy of pain control and the prediction of respiratory complications these factors need to be examined.

Acknowledgments

We thank the physicians of North Carolina for referring their patients to the North Caro-

lina Memorial Hospital Pain Clinic, and Maria Gregoris, Ann McDonald and Rita Denny for secretarial assistance and Clarice Page for technical assistance.

Supported by HL17314 and HL00218 from the Heart, Lung and Blood Institute, National Institutes of Health, and PHS grant CA 17973 to the University of North Carolina School of Medicine at Chapel Hill, and Biochem International (Milwaukee, Wis.)

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To give an idea of the difficulty of investigating the causes of medical phenomena, the following remarks will be sufficient.

The same causes, apparently under the same circumstances, will have different effects; thus, a current of cold air blowing on the upper parts of the body, produces in the same system, croup, or palsy of the muscles of the face: the same cause, apparently under different circumstances, will produce the same effect; thus, miasmata developed in every variety of constitution, the intermittent fever; which, when epidemic, assumes the character of almost all diseases. Different causes, to all appearance under different circumstances, produce the same effect; apoplexy is the result of the heat of the sun, of high living, etc. proving that the subject requires the most patient and unwearied attention and research: for the qualities of the air, of food, exposure, predisposition, etc. all operate to give a distracted character to the face of medical opinion. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

Special Article

Proceedings of the State Medical Convention, Held in Raleigh, April, 1849, and Constitution and Medical Ethics of The Medical Society of the State of North Carolina, Then Adopted

INTRODUCTION: This issue of the JOURNAL offers the "Proceedings of the State Medical Convention held in Raleigh, April 1849 and Constitution and Medical Ethics of the Medical Society of the State of North Carolina Then Adopted" as "published by the order of the convention." The printer was W. W. Holden, fully named William Woods Holden (1818-1892) known to history as the editor of the RALEIGH STANDARD, an early Democratic opponent of Zebulon Baird Vance, later Republican party leader and state governor after the Civil War and as controversial a character as 19th Century North Carolina politics spawned.

The document is well worth reading for the light it casts on the beginnings of our society. Its founders

offer injunctions to us and set forth the right good standard for proper medical behavior. Their detailed indictments of cults and of followers of the bizarre in the healing arts deserve our attention as well. Our medical forbears would recognize that the many alternative forms of healing advocated today had their equivalents then and would also remind us that man's morals have hardly been buttressed by either political party (Whigs and Democrats then, Republicans and Democrats now) or by governments at any time.

If we can judge from the style of the composers, theirs was a more leisurely time when prose could be polished, elaborated and exact in definition. They did use such Britishisms as savour and offence, in-

stead of savor and offense but even that adds savour.

The elaborate courtesy of consultation practiced then lives on only in its description but it did serve effectively to defuse tempers and prevent polemics in a profession which above all demands calmness, kindness, honesty and a judicious approach to patients. Today we are more cognizant and tolerant of clinical disagreement, partly because we are aware of so many more diagnostic and therapeutic possibilities. In fact, we encourage some of this disagreement because it attests to greater understanding and sustained curiosity. It reflects the vitality of modern medicine, encourages scholarship and allows the cultivation of judgment without encouraging the judgmental.

J.H.F.

CODE OF MEDICAL ETHICS

Adopted by the American Medical Association and recognized by the Medical Society of the State of North Carolina.

Excerpted from the Proceedings of the State Medical Convention, held in Raleigh, April, 1849

INTRODUCTION TO THE CODE OF MEDICAL ETHICS.

MEDICAL ethics, as a branch of general ethics, must rest on the basis of religion and morality. They

comprise not only the duties, but also the rights of a physician: and, in this sense, they are identical with Medical Deontology — a term introduced by a late writer, who has

taken the most comprehensive view of the subject.

In framing a code on this basis, we have the inestimable advantage of deducting its rules from the con-

duct of the many eminent physicians who have adorned the profession by their learning and their piety. From the age of Hippocrates to the present time, the annals of every civilized people contain abundant evidences of the devotedness of medical men to the relief of their fellow creatures from pain and disease, regardless of the privation and danger, and not seldom obloquy, encountered in return; a sense of ethical obligations rising superior, in their minds, to considerations of personal advancement. Well and truly was it said by one of the most learned men of the last century, that the duties of a physician were never more beautifully exemplified than in the conduct of Hippocrates, nor more eloquently described than in his writings.

We may here remark, that, if a state of probation be intended for moral discipline, there is assuredly, much in the daily life of a physician to impart this salutary training, and to insure continuance in a course of self-denial, and at the same time, of zealous and methodical efforts for the relief of the suffering and unfortunate, irrespective of rank or fortune, or of fortuitous elevation of any kind.

A few considerations on the legitimate range of medical ethics will serve as an appropriate introduction to the requisite rules for our guidance in the complex relations of professional life.

Every duty or obligation implies, both in equity and for its successful discharge, a corresponding right. As it is the duty of a physician to advise, so has he a right to be attentively and respectfully listened to. Being required to expose his health and life for the benefit of the community, he has a just claim, in return, on all its members, collectively and individually, for aid to carry out his measures, and for all possible tenderness and regard to prevent needlessly harassing calls on his services and unnecessary exhaustion of his benevolent sympathies.

His zeal, talents, attainments and skill are qualities which he holds in trust for the general good, and

which cannot be prodigally spent, either through his own negligence or the inconsiderateness of others, without wrong and detriment both to himself and to them.

The greater the importance of the subject and the more deeply interested all are in the issue, the more necessary it is that the physician — he who performs the chief part, and in whose judgment and discretion under Providence, life is secured and death turned aside — should be allowed the free use of his faculties, undisturbed by a querulous manner, and desponding, angry, or passionate interjections, under the plea of fear, or grief, or disappointment of cherished hopes, by the sick and their friends.

All persons privileged to enter the sick room, and the number ought to be very limited, are under equal obligations of reciprocal courtesy, kindness and respect; and, if any exception be admissible, it cannot be at the expense of the physician. His position, purposes and proper efforts eminently entitle him to, at least, the same respectful and considerate attentions that are paid, as a matter of course and apparently without constraint, to the clergyman, who is admitted to administer spiritual consolation, and to the lawyer who comes to make the last will and testament.

Although professional duty requires of a physician, that he should have such a control over himself as not to betray strong emotion in the presence of his patient, not to be thrown off his guard by the querulousness or even rudeness of the latter, or of his friends at the bedside, yet, and the fact ought to be generally known, many medical men, possessed of abundant attainments and resources, are so constitutionally timid and readily abashed as to lose much of their self-possession and usefulness at the critical moment, if opposition be abruptly interposed to any part of the plan which they are about devising for the benefit of their patients.

Medical ethics cannot be so divided as that one part shall obtain the full and proper force of moral obligations on physicians univer-

sally, and, at the same time, the other be construed in such a way as to free society from all restrictions in its conduct to them; leaving it to the caprice of the hour to determine whether the truly learned shall be overlooked in favor of ignorant pretenders — persons destitute alike of original talent and acquired fitness.

The choice is not indifferent in an ethical point of view, besides its important bearing on the fate of the sick themselves, between the directness and sincerity of purpose, the honest zeal, the learning and impartial observations, accumulated from age to age for thousands of years, of the regularly initiated members of the medical profession, and the crooked devices and low arts, for evidently selfish ends, the unsupported promises and reckless trials of interloping empirics, whose very announcements of the means by which they profess to perform their wonders, are, for the most part, misleading and false, and, so far, fraudulent.

In thus deducing the rights of a physician from his duties, it is not meant to insist on such a correlative obligation, that the withholding of the right exonerates from the discharge of the duty. Short of the formal abandonment of the practice of his profession, no medical man can withhold his services from the requisition either of an individual or of the community, unless under circumstances, of rare occurrence, in which his compliance would be not only unjust, but degrading to himself, or to a professional brother, and so far diminish his future usefulness. In the discharge of their duties to society, physicians must be ever ready and prompt to administer professional aid to all applicants, without prior stipulation of personal advantages to themselves.

On them devolves, in a peculiar manner, the task of noting all the circumstances affecting the public health, and of displaying skill and ingenuity in devising the best means for its protection.

With them rests also the solemn duty of furnishing accurate medical testimony in all cases of criminal accusation of violence, by which

health is endangered and life destroyed, and in those other numerous ones involving the question of mental sanity and of moral and legal responsibility.

On these subjects — Public Hygiene and Medical Jurisprudence — every medical man must be supposed to have prepared himself by study, observation, and the exercise of a sound judgment. They cannot be regarded in the light of accomplishments merely: they are an integral part of the science and practice of medicine.

It is a delicate and noble task, by the judicious application of Public Hygiene, to prevent disease and prolong life; and thus to increase the productive industry, and, without assuming the office of moral and religious teaching, to add to the civilization of an entire people.

In the performance of this part of their duty, physicians are enabled to exhibit the close connection between hygiene and morals; since all the causes contributing to the former are nearly equally auxiliary to the latter. Physicians, as conservators of public health, are bound to bear emphatic testimony against quackery in all its forms, whether it appears with its usual effrontery, or masks itself under the garb of philanthropy and sometimes religion itself. By an anomaly in legislation and penal enactments, the laws so stringent for the repression and punishment of fraud in general, and against attempts to sell poisonous substances for food, are silent, and of course inoperative, in the cases of both fraud and poisoning so extensively carried on by the host of quacks who infest the land.

The newspaper press, powerful in the correction of many abuses, is too ready, for the sake of lure, to aid and abet the enormities of quackery. Honorable exceptions to the once general practice in this respect are becoming, happily, more numerous, and they might be more rapidly increased, if physicians when themselves free from all taint, were to direct the attention of the editors and proprietors of newspapers, and of periodical works in general to the moral bearings of the subject.

To those who, like physicians, can best see the extent of the evil, it is still more mortifying than in the instances already mentioned, to find members of other professions, and especially ministers of the Gospel, so prone to give their countenance, and, at times, direct patronage, to medical empirics, both by their use of nostrums, and by their certificates in favor of the absurd pretension of these impostors. The credulous, on these occasions, place themselves in the dilemma of bearing testimony either to a miracle or to an imposture; to a miracle, if one particular agent, and it often of known inertness or slight power, can cure all diseases, or even any one disease in all stages; to an imposture, if the alleged cures are not made, as experience shows they are not.

But by no class are quack medicines and nostrums so largely sold and distributed as by apothecaries, whose position towards physicians, although it may not amount to actual affinity, is such that it ought, at least, to prevent them from entering into an actual, if not formally recognized, alliance with empirics of every grade and degree of pretension.

Too frequently we meet with physicians who deem it a venial error in ethics, to permit, and even to recommend, the use of a quack medicine or secret compound by their patients and friends. They forget that their toleration implies sanction of a recourse by the people generally to unknown, doubtful and conjectural fashions of medication; and that the credulous in this way soon become the victims of an endless succession of empirics. It must have been generally noticed, also, that they whose faith is strongest in the most absurd pretensions of quackery, entertain the greatest skepticism towards regular and philosophical medicine.

Adverse alike to ethical propriety and to medical logic, are the various popular delusions which, like so many epidemics, have in successive ages, excited the imagination with extravagant expectations of the cure of all diseases and the prolongation of life beyond its customary limits,

by means of a single substance. Although it is not in the power of physicians to prevent, or always to arrest, these delusions in their progress, yet it is incumbent on them, from their superior knowledge and better opportunities, as well as from their elevated vocation, steadily to refuse to extend to them the slightest countenance, still less support.

These delusions are sometimes manifested in the guise of new and infallible systems of medical practice, — faith in which, among the excited believers, is usually in the inverse ratio of the amount of common sense evidence in its favor. Among the volunteer missionaries for its dissemination, it is painful to see members of the sacred profession, who above all others, ought to keep aloof from vagaries of any description, and especially of those medical ones which are allied to empirical imposture.

The plea of good intention is not an adequate reason for the assumption of so grave a responsibility as the propagation of a theory and practice of medicine, of the real foundation and nature of which the mere medical amateur must necessarily, from his want of opportunities for study, observation, and careful comparison, be profoundly ignorant.

In their relations with the sick, physicians are bound by every consideration of duty, to exercise the greatest kindness with the greatest circumspection; so that whilst they make every allowance for impatience, irritation and inconsistencies of manner and speech of the sufferers, and do their utmost to soothe and tranquilize, they shall at the same time elicit from them and the persons in their confidence, a revelation of all the circumstances connected with the probable origin of the diseases which they are called upon to treat.

Owing either to the confusion and, at times, obliquity of mind produced by the disease, or to considerations of false delicacy and shame, the truth is not always directly reached on these occasions; and hence the necessity, on the part of the physician, of a careful and

minute investigation into both the physical and moral state of his patient. A physician in attendance on a case should avoid expensive complications and tedious ceremonials, as being beneath the dignity of true science and embarrassing to the patient and his family, whose troubles are already great.

In their intercourse with each other, physicians will best consult and secure their own self-respect and consideration from society in general, by a uniform courtesy and high-minded conduct towards their professional brethren. The confidence in his intellectual and moral worth, which each member of the profession is ambitious of obtaining for himself among his associates, ought to make him willing to place the same confidence in the worth of others.

Veracity, so requisite in all the relations of life, is a jewel of inestimable value in medical description and narrative, the lustre of which ought never to be tarnished for a moment, by even the breath of suspicion. Physicians are peculiarly enjoined, by every consideration of honour and of conscientious regard for the health and lives of their fellow being, not to advance any statement unsupported by positive facts, nor to hazard an opinion or hypothesis that is not the result of deliberate inquiry into all the data and bearings of which the subject is capable. Hasty generalization, paradox, and fanciful conjectures, repudiated at all times by sound logic, are open to the severest reprobation on the still higher grounds of humanity and morals. Their tendency and practical operation cannot fail to be eminently mischievous.

Among medical men associated together for the performance of professional duties in public institutions, such as Medical Colleges, Hospitals and Dispensaries, there ought to exist, not only harmonious intercourse, but also a general harmony in doctrine and practice; so that neither student nor patients shall be perplexed, nor the medical community mortified by contradictory views of the theory of disease, if not of the means of curing it.

The right of free inquiry, common to all, does not imply the utterance of crude hypothesis, the use of figurative language, a straining after novelty for novelty's sake, and the involution of old truths, for temporary effect and popularity, by medical writers and teachers. If, therefore, they who are engaged in a common cause, and for the furtherance of a common object, could make an offering of the extreme, the doubtful, and the redundant, at the shrine of philosophical truth, the general harmony in medical teaching, now desired, would be of easy attainment.

It is not enough, however, that the members of the medical profession be zealous, well informed and self-denying, unless the social principle be cultivated by their seeking frequent intercourse with each other, and cultivating, reciprocally, friendly habits of acting in common. By union alone can medical men hope to sustain the dignity and extend the usefulness of their profession. Among the chief means to bring about this desirable end, are frequent social meetings and regularly organized Societies; a part of whose beneficial operation would be an agreement on a suitable standard of medical education, and a code of medical ethics.

Greatly increased influence, for the entire body of the profession, will be acquired by a union for the purposes of common benefit and the general good; while to its members, individually, will be insured a more pleasant and harmonious intercourse, one with another, and an avoidance of many heartburnings and jealousies, which originate in misconceptions, through misrepresentation on the part of individuals in general society, of each other's disposition, motives and conduct. In vain will physicians appeal to the intelligence and elevated feelings of the members of other professions, and of the better part of society in general, unless they be true to themselves, by a close adherence to their duties, and by firmly yet mildly insisting on their rights; and this not with glimmering perception and faint avowal but rather with a

full understanding and firm convictions.

Impressed with the nobleness of their vocation, as trustees of science and almoners of benevolence and charity, physicians should use unceasing vigilance to prevent the introduction into their body of those who have not been prepared by a suitably preparatory moral and intellectual training.

No youth ought to be allowed to study medicine, whose capacity, good conduct, and elementary knowledge are not equal, at least, to the common standard of academical requirements.

Human life and human happiness must not be endangered by the incompetence of presumptuous pretenders. The greater and inherent difficulties of medicine, as a science, and the more numerous the complications that embarrass in its practice, the more necessary is it that there should be minds of a higher order and thorough cultivation to unravel its mysteries and to deduce scientific order from apparently empirical confusion.

We are under the strongest ethical obligations to preserve the character which has been awarded, by the most learned men and best judges of human nature, to the medical profession, for general and extensive knowledge, great liberality, and dignity of sentiment, and prompt effusions of beneficence.

In order that we may continue to merit these praises, every physician, within the circle of his acquaintance, should impress both fathers and sons with the range and variety of medical study, and with the necessity of those who desire to engage in it, possessing, not only good preliminary knowledge, but, likewise some habits of regular and systematic thinking.

If able teachers and writers, and profound inquirers, be still called for to expound medical science, and to extend its domain of practical application and usefulness, they cannot be procured by intuitive effort of their own part, nor by the exercise of the elective suffrage on the part of others. They must be the product of a regular and comprehensive system — members of a large class,

from the great body of which they only differ by the force of fortuitous

circumstances, that gives them temporary vantage ground for the

display of qualities and attainments common to their brethren.

CHAPTER ONE

OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

Art. I — Duties of Physicians to their Patients.

1. A Physician should not only be ever ready to obey the calls of the sick, but his mind ought also to be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. Those obligations are the more deep and enduring, because there is no tribunal other than his own conscience, to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick with due impressions of the importance of their office; reflecting that the ease, the health and the lives of those committed to their office; reflecting that the ease, the health and the lives of those committed to their charge depend on their skill, attention, and fidelity. They should study, also, in their deportment, so to unite tenderness with firmness, and condescension with authority, as to inspire the minds of their patients with gratitude, respect and confidence.

2. Every case committed to the charge of a physician should be treated with attention, steadiness and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted in their professional visits, should be used with discretion, and with the most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance, should ever be divulged by him except

when he is imperatively required to do so. The force and necessity of this obligation are indeed so great, that professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

3. Frequent visits to the sick are in general requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, — to meet promptly every change which may occur, and also tend to preserve the confidence of the patient. But unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and render him liable to be suspected of interested motives.

4. A physician should not be forward to make gloomy prognostications, because they savour of empiricism, by magnifying the importance of his services in the treatment of cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger, when it really occurs; and even to the patient himself, if absolutely necessary. This office, however, is so peculiarly alarming when executed by him, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy. For, the physician should be the minister of hope and comfort to the sick, that by such cordials to the drooping spirit, he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquility of the most resigned, in their last moments. The life of a sick person can be shortened not only by the acts, but also by the words of manner of a physician. It is therefore, a sacred duty to guard himself carefully in this re-

spect, and to avoid all things which have a tendency to discourage the patient and to depress his spirits.

5. A physician ought not to abandon a patient because the case is deemed incurable; for his attendance may continue to be highly useful to the patient, and comforting to the relatives around him, even in the last period of a fatal malady, by alleviating pain and other symptoms, and by soothing mental anguish. To decline attendance, under such circumstances, would be sacrificing to fanciful delicacy and mistaken liberality, that moral duty which is independent of, and far superior to, all pecuniary considerations.

6. Consultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy, and more enlarged views in practice.

7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients, suffering under the consequences of vicious conduct, ought never to be neglected. His counsels, or even remonstrances, will give satisfaction, not offence, if they be proffered with politeness, and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

Art. II — Obligations of Patients to their Physicians

1. The members of the medical profession, upon whom are enjoined the performance of so many important and arduous duties towards the community, and who are required to make so many sacrifices of comfort, ease, and health, for the welfare of those who avail themselves of their services, certainly have a right to expect and require,

that their patients should entertain a just sense of the duties which they owe to their medical attendants.

2. The first duty of a patient is, to select as his medical adviser one who has received a regular professional education. In no trade or occupation, do mankind rely on the skill of an untaught artist; and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

3. Patients should prefer a physician whose habits of life are regular and who is not devoted to company, pleasure, or to any pursuit incompatible with his professional obligations. A patient should, also, confide the care of himself and family, as much as possible, to one physician, for a medical man who has become acquainted with the peculiarities of constitution, habits, and predispositions of those he attends, is more likely to be successful in his treatment, than one who does not possess that knowledge.

A patient who has thus selected his physician, should always apply for advice in what may appear to him trivial cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

4. Patients should faithfully and unreservedly communicate to their physician the supposed cause of their disease. This is the more important, as many diseases of mental origin simulate those depending on external causes, and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser; he should always bear in mind that a medical man is under the strongest obliga-

tions of secrecy. Even the female sex should never allow feelings of shame or delicacy to prevent their disclosing the seat, symptoms and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurrences of life, its strict observance in medicine is often attended with the most serious consequences, and a patient may sink under a painful and loathsome disease, which might have been readily prevented, had timely intimation been given to the physician.

5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease. Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories, than by the most minute account of his own framing. Neither should he obtrude the details of his business nor the history of his family concerns.

6. The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions as to their fitness, to influence his attention to them. A failure in one particular may render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink, and exercise. As patients become convalescent they are very apt to suppose that the rules prescribed for them may be disregarded, and the consequence but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever, that may be recommended to them by the self-constituted doctors and doctresses, who are so frequently met with, and who pretend to possess infallible remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often happens that they are productive of much mischief, and in all

cases they are injurious, by contravening the plan of treatment adopted by the physician.

7. A patient should, if possible, avoid even the friendly visits of a physician who is not attending him, and when he does receive them, he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert; for, although their modes of treatment may be attended with equal success when employed singly, yet conjointly they are very likely to be productive of disastrous results.

8. When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing.

9. Patients should always, when practicable, send for their physician in the morning, before his usual, hour of going out; for, by being early aware of the visits he has to pay during the day, the physician is able to apportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical adviser unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physician, as the detention of a few minutes is often of serious inconvenience to him.

10. A patient should, after his recovery, entertain a just and enduring sense of the value of the services rendered him by his physician; for these are of such a character, that no mere pecuniary acknowledgment can repay or cancel them.

CHAPTER TWO

OF THE DUTIES OF PHYSICIANS TO EACH OTHER, AND TO THE PROFESSION AT LARGE.

Art. I. — Duties for the support of professional character.

1. Every individual, on entering the profession, as he becomes thereby entitled to all its privileges and immunities, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness. He should therefore observe strictly, such laws as are instituted for the government of its members — should avoid all contumelious and sarcastic remarks relative to the faculty, as a body; and while, by unwearied diligence, he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labours, brought it to the elevated position in which he finds it.

2. There is no profession, from the member of which greater purity of character, and a higher standard of moral excellence are required, than the medical; and to attain such eminence, is a duty every physician owes alike to his profession, and to his patients. It is due to the latter, as without it he cannot command their respect and confidence, and to both, because no scientific attainments can compensate for the want to correct moral principles. It is also incumbent upon the faculty to be temperate in all things, for the practice to physic requires the unremitting exercise of a clear and vigorous understanding; and, on emergencies for which no professional man should be unprepared, a steady hand, an acute eye, and an unclouded head may be essential to the well-being, and even to the life of a fellow creature.

3. It is derogatory to the dignity of the profession, to resort to public advertisements or private cards or handbills, inviting the attention of individuals affected with particular diseases — publicly offering advice and medicine to the poor gratis, or promising radical cures; or to publish cases and operations in the daily press, or suffer such publications to

be made; — to invite laymen to be present at operations, — to boast of cures and remedies, — to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practice of empirics, and are highly reprehensible in a regular physician.

4. Equally derogatory to professional character is it, for a physician to hold a patent for any surgical instrument, or medicine; or to dispense a secret nostrum, whether it be the composition or exclusive property of himself, or of others. For if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and, if mystery alone give it value and importance, such craft implies either disgraceful ignorance, or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them.

Art. II — Professional services of physicians to each other.

1. All practitioners of medicine, their wives, and their children, while under the paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them, whose assistance may be desired. A physician afflicted with disease is usually an incompetent judge of his own case; and the natural anxiety and solicitude which he experiences at the sickness of a wife, a child, or any one who by the ties of consanguinity is rendered peculiarly dear to him, tend to obscure his judgment, and produce timidity and irresolution in his practice. Under such circumstances, medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously; as such unasked civility may give rise to embarrassment, or interfere with that choice, on which

confidence depends. But, if a distant member of the faculty, whose circumstances are affluent, request attendance, and an honorarium be offered, it should not be declined; for no pecuniary obligation ought to be imposed, which the party receiving it would wish not to incur.

Art. III — Of the duties of the physician as respects vicarious offices.

1. The affairs of life, the pursuit of health, and the various accidents and contingencies to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients, and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy, which should always be performed with the utmost consideration for the interest and character of the family physician and when exercised for a short period, all the pecuniary obligations for such service should be awarded to him. But if a member of the profession neglect his business in quest of pleasure and amusement, he cannot be considered as entitled to the advantages of the frequent and long-continued exercise of this fraternal courtesy, without awarding to the physician who officiates the fees arising from the discharge of his professional duties.

Art. IV — Of the duties of physicians in regard to consultations.

1. A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultation the good of the patient is the sole object in view, and this is often dependent on personal confidence, no intelligent regular practitioner, who has a license to practice from some medical board of known and acknowledged respectability, recognized by this association, and who is in good moral and

professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner, or a fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology and organic chemistry.

2. In consultations no rivalry or jealousy should be indulged; candour, probity, and all due respect should be exercised towards the physician having charge of the case.

3. In consultations the attending physician should be the first to propose the necessary questions to the sick; after which the consulting physician should have the opportunity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for deliberation; and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express. But no statement or discussion of it should take place before the patient or his friends, except in the presence of all the faculty attending, and by their common consent; and no opinions or prognostications should be delivered, which are not the result of previous deliberation and concurrence.

4. In consultations, the physician in attendance should deliver his opinion first; and when there are several consulting, they should deliver their opinions in the order in which they have been called in. No decision, however, should restrain the attending physician from making such variations in the mode of treatment, as any subsequent unexpected change in the character of the case may demand. But such variation and the reasons for it ought to be carefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician if he is sent for in an emergency, when the regular

attendant is out of the way, and similar explanations must be made by him, at the next consultation.

5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultation together, and this is generally practicable, for society has been considerate enough to allow the plea of a professional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation. But as professional engagements may sometimes interfere, and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after which the consultation should be considered as postponed to a new appointment. If it be the attending physician who is present, he will of course see the patient and prescribe; but if it be the consulting one, he should retire, except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patients, and give his opinion in writing and under seal, to be delivered to his associate.

6. In consultations, theoretical discussions should be avoided, as occasioning perplexity and loss of time. For there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded, not on hypothesis, but on experience and observation.

7. All discussions in consultation should be held as secret and confidential. Neither by words nor manner should any of the parties to a consultation assert or insinuate, that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants; they must equally share the credit of success as well as the blame of failure.

8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered as decisive; but if the numbers be equal on each side, then the decision should rest with the attending physician. It may, moreover,

sometimes happen, that two physicians cannot agree in their views of the nature of a case, and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concessions, as far as they can be justified by a conscientious regard for the dictates of judgment. But in the event of its occurrence, a third physician should, if practicable, be called to act as umpire, and if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in whom he is most willing to confide. But as every physician relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from any further deliberation in the consultation, or participation in the management of the case.

9. As circumstances sometimes occur to render a special consultation desirable, when the continued attendance of two physicians might be objectionable to the patient, the member of the faculty whose assistance is required in such cases, should sedulously guard against all future unsolicited attendance. As such consultations require an extraordinary portion both of time and attention, at least a double honorarium may be reasonably expected.

10. A physician who is called upon to consult, should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified as far as it can be consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out, which could impair the confidence reposed in him, or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentions or assiduities, which are too often practiced by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

Art. V—Duties of physicians in cases of interference.

1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice.

2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest caution and reserve. No meddling inquiries should be made; no disingenuous hint given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

3. The same circumspection and reserve should be observed when from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances, and when they are made, no particular inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

4. A physician ought not to take charge of, or prescribe for a patient who has recently been under the care of another member of the faculty in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case or been regularly notified that his services are no longer desired. Under such circumstances no unjust and illiberal insinuations should be thrown out in relation to the conduct or practice previously pursued, which should be justified as far as candor, and regard for truth and probity will permit; for it often happens, that patients become dissatisfied when they do not experience immediate relief, and, as many diseases are naturally pro-

tracted, the want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

5. When a physician is called to an urgent case, because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign the care of the patient to the latter immediately on his arrival.

6. It often happens, in cases of sudden illness, or of recent accidents and injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances courtesy should assign the patient to the first who arrives, who should select from those present, any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates, should request the family physician, if there be one, to be called, and unless his further attendance be requested, should resign the case to the latter on his arrival.

7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on the return or recovery of the regular attendant, and with the consent of the patient, to surrender the case.

8. A physician, when visiting a sick person in the country, may be desired to see a neighboring patient who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere no farther than is absolutely necessary with the general plan of treatment; to assume no future direction, unless it be expressly desired; and, in this last case, to request an immediate consultation with the practitioner previously employed.

9. A wealthy physician should not give advice gratis to the affluent; because his doing so is an injury to his professional brethren. The of-

fice of a physician can never be supported as an exclusively beneficent one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with, which might justly be claimed.

10. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

Art. VI — Of differences between physicians.

1. Diversity of opinion, and opposition of interest, may, in the medical, as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur, and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians, or a court-medical.

As peculiar reserve must be maintained by physicians towards the public, in regard to professional matters, and as there exist numerous points in medical ethics and etiquette through which the feeling of medical men may be painfully assailed in their intercourse with each other, and which cannot be understood or appreciated by general society, neither the subject matter of such differences nor the adjudication of the arbitrators should be made public, as publicity in a case of this nature may be personally injurious to the individuals concerned, and can hardly fail to bring discredit on the faculty.

Art. VII — Of pecuniary acknowledgments.

1. Some general rules should be adopted by the faculty, in every town or district, relative to pecuniary acknowledgments from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

CHAPTER THREE

OF THE DUTIES OF THE PROFESSION TO THE PUBLIC, AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

Art. I — Duties of the profession to the public.

1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens: they should also be ever ready to give council to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene, and legal medicine. It is their province to enlighten the public in regard to quarantine regulations; the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions, in relation to the medical police of towns, as drainage, ventilation, and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

2. Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten coroner's inquest and courts of justice, on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poisons or other violent means, and in regard to the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to make a post-

mortem examination, it is just, in consequence of the time, labor and skill required, and the responsibility and risk they incur, that the public should award them a proper honorarium.

3. There is no profession, by the members of which, eleemosynary services are more liberally dispensed, than the medical, but justice requires that some limits should be placed to the performance of such good offices. Poverty, professional brotherhood, and certain public duties referred to in section I of this chapter, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, to perform militia duty, or to testify to the state of health of persons wishing to insure their lives, obtain pensions or the like, without a pecuniary acknowledgment. But to individuals in indigent circumstances, such professional services should always be cheerfully and freely accorded.

4. It is the duty of physicians, who are frequent witnesses of the enormities committed by quackery, and the injury to health and even destruction of life caused by the use of

quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empirics and impostors. Physicians ought to use all the influence which they may possess, as professors in College of Pharmacy, and by exercising their option in regard to the shops to which their prescriptions shall be sent, to discourage the druggists and apothecaries from vending quack or secret medicines or from being in any way engaged in their manufacture and sale.

Art. II — Obligations of the public to Physicians.

1. The benefits accruing to the public directly and indirectly from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true science and the assumptions of ignorance and empiricism, to afford every encouragement and facility for the acquisition of medical education, and no longer to allow the statute books to exhibit the anomaly of exacting knowledge from physicians, under liability to heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

LUCRETIUS [96?-55 B.C.]

Nor does it matter a whit with what food the body is nourished, so long as you can digest what you take, and distribute it abroad through the limbs, and preserve the moisture of the stomach uninterrupted.

On the Nature of Things, IV. 630 (tr. by W. H. D. Rouse)

Toxic Encounters of the Dangerous Kind

THE NOT-ALWAYS-TRANQUILIZING PHENOTHIAZINES

As a class, the phenothiazines are a remarkable group of drugs and are among the most widely prescribed in this country. They are used as antipsychotic, anti-nausea, antiemetic and antihistaminic agents as well as for their ability to potentiate analgesics, sedatives and general anesthetics. Pharmacologically they are believed to block post-synaptic dopamine receptors and peripheral cholinergic systems as well as to exhibit anticholinergic activity in the brain and to induce adrenergic blockade and adrenergic action secondary to the inhibition of re-uptake of amines.

Phenothiazines are divided into three classes, based on side chain substitution, which are chemically distinct and produce different clinical effects.

Chemical		Trade Name
	<i>Aliphatic</i>	
chlorpromazine		Thorazine
promethazine		Phenergan
promazine		Sparine
triflupromazine		Vesprin
	<i>Piperidine</i>	
mesordazine		Serentil
thioridazine		Mellaril
piperacetazine		Quide
	<i>Piperazine</i>	
perphenazine		Trilifon
fluphenazine		Prolixin
prochlorperazine		Compazine
trifluoperazine		Stelazine
acetophenazine		Tindal

Because of their different properties their effects in overdose differ as well, although there is overlap.

	<i>Aliphatic</i>	<i>Piperidine</i>	<i>Piperazine</i>
Antipsychotic effects	+	++	+++
Extrapyramidal reactions	++	+	+++
Hypotension	+++	+++	+
Sedation	+++	+++	+
Cardiotoxicity	++	+++	++

It is possible to predict the major toxic reactions resulting from an overdose by knowing what class the phenothiazine is in. Thus the following generalizations concerning overdose can be made:

The *aliphatic group* is likely to produce

greatest CNS depression including coma, most likely to exhibit epileptogenic potential and most likely to produce hypotension. Little tendency for extrapyramidal reactions is exhibited.

The *piperidine group* has the least potential for producing extrapyramidal reactions, but causes remarkable sedation and hypotension and has the greatest potential for cardiotoxicity.

The *piperazine group* is probably the most interesting because it is by far the most likely to produce an extrapyramidal reaction (most probably on an idiosyncratic basis) and least likely to induce hypotension, seizures, sedation or cardiotoxicity. (It is probably the most antiemetic.)

Thus the reaction of a patient taking too much phenothiazine can be predicted if the offending drug can be identified. (The toxic doses of the phenothiazines are not well established however.) Toxic reactions include *hypotension*, *miosis* (very important diagnostically), *hypothermia* (also quite important diagnostically), *myocardial depression* (similar to quinidine), *CNS depression*, *pseudo-intestinal obstruction* and *urinary retention*.

By far the most dramatic and the most bizarre reactions are those of the *extrapyramidal system*. These are of three basic types: *akinesia* — weakness and muscular fatigue; *akathisia* — motor restlessness, jerking movements, "jitteriness," chewing movements; and *dystonia*, best defined as an extra-pyramidal disturbance consisting of uncoordinated and involuntary spasmodic movements of certain muscle groups.

The *acute dystonic* reaction is probably the most common phenothiazine reaction we see. Very miserable, uncomfortable patients present to the emergency room in a variety of dystonic postures: oculogyric, torticollis, opisthotonic, buccolingual, tortipelvic. In a typical acute dystonic reaction there is trismus, forced jaw openings, spasms of the tongue with occlusion and "growing" movements, arching and twisting of the back, bizarre posturing of the limbs, upward gaze paralysis and the hands in a "tetanic po-

sition." This reaction is marked by abrupt onset, periodicity (lasting 1-3 minutes), full consciousness usually and muscle pain during the "spells."

The patient appears to the unexperienced health care professional as if "possessed by demons" and needing an exorcist. These peculiar extrapyramidal reactions are more common in children especially those who are febrile and/or dehydrated. In younger patients the dystonia is more likely to be generalized whereas in adults it is often limited to the head, neck and arms.

Several other drugs can produce a similar acute dystonic reaction, the most prominent being halperidol (Haldol) but it has been reported following the use of trimethobenzamide (Tigan), thiethylperazine (Torecan), thioxanthines (Taractan and Navane) and metoclopramide (Reglan). Many authorities suggest that the acute dystonic reaction is not necessarily a response to overdose but is in fact, an idiosyncratic reaction.

Diagnosis of phenothiazine toxicity can be aided by the history of ingestion, suspicious physical findings, the ferric chloride (Phenistix) urine test, and interestingly enough by a plain abdominal film — phenothiazines being radio-opaque. Blood levels do not correlate well with symptoms or prognosis.

The general treatment of phenothiazine overdose includes ipecac-induced emesis if the patient is awake, alert and has a gag reflex (apparently ipecac will induce

emesis in the face of the antiemetic properties of the phenothiazines especially if it is given early) or gastric lavage if emesis would be dangerous, activated charcoal, and a saline cathartic. Forced diuresis, dialysis, and hemoperfusion are not helpful. Specific treatment includes the correction of hypothermia; diazepam or phenytoin for seizure control; IV fluids and norepinephrine or methoxamine for hypotension (epinephrine or dopamine can make the hypotension worse); propranolol for supraventricular tachycardia; and NaHCO₃, lidocaine or phenytoin for ventricular arrhythmias (avoid quinidine, procainamide or disopyramide).

The treatment for the acute dystonia can be most gratifying. To reverse this uncomfortable condition quickly, use benztropine mesylate (Cogentin) IV (currently considered by many the drug of choice) or diphenhydramine (Benadryl) IV which also produces a dramatic reversal of the process. If that fails call an exorcist or wait 24 hours because dystonia is for most patients, a self-limiting process.

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Bowman Gray School of Medicine
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Winston-Salem, N.C., and
Chairman, Committee on Accidents
and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics

PARACELSUS [1493?-1541]

Now they say when I come to a patient, I know not immediately what ails him, but I need time to find out. It is true. That they judge immediately is the fault of foolishness; for in the end the first judgment is false and from day to day they know the longer, the less, what it is, and make liars of themselves. Whereas I desire to approach from day to day, the longer, the closer to the truth. For with hidden diseases it is not as with the recognising of colours: in colours one sees well what is black, green, blue, etc. But if there were a curtain before it, thou also wouldst not know. To see through a curtain requires effort where there has been none before. What the eyes see can well be judged hurriedly, but what is hidden from the eyes it is in vain to conceive as though it were visible.

Seven Defensiones, "The Seventh Defense" (tr. by Lilian Temkin)



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Editorials

THANK YOU

Each year the conscientious efforts of those who review manuscripts for us make a better NORTH CAROLINA MEDICAL JOURNAL possible. Without their industry, we could not have a state medical society publication. The editor and the society stand in the debt of these reviewers who helped us in 1981.

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CLINICAL DISAGREEMENT

As noted elsewhere in this issue of the *Journal* (p 220), our clinical forebears were rightly concerned about the resolution of differences between physicians. In these times of subspecialization, such dangers can be even greater because of the impossibility of ever knowing enough in clinical medicine. But we have actually advanced medicine, scientifically and as an art, by encouraging dissent as an obligation.

For this to be possible, a mechanism has had to evolve toward what should be a fruitful tradition in patient care. The dynamics of this process have been recently analyzed by members of the Department of Clinical Epidemiology and Biostatistics of McMaster University in Hamilton, Ontario, and certain critical features identified.^{1,2}

If the disease process is to be understood and interrupted, its etiology must be recognized and means of minimizing serious consequences devised. The etiology of clinical disagreement has three aspects — the examiner (doer), the examined (source) and the examination (historical and physical). Features latent in each of these phases must be recognized (Table I).¹

The taking and giving of the history as representative of the doctor-patient relationship wherein confidences are being expressed and offered is a particularly critical event. Establishing good relationship

requires interpretation of body language and even more importantly appreciating that doctor and patient must share a vocabulary. Only then can the data supplied be logically considered and diagnostic hypotheses generated. Knowing when to listen and when to interrupt are absolutely necessary if a good and accurate history is to be obtained.

Assuming an accurate history and a definitive physical examination, what steps are to be taken to minimize disagreement and simplify management?² It must be assumed here that simplified management means better management.

First, "Match the diagnostic environment to the diagnostic task."

Then, "Seek corroboration of key findings:"

1. "Repeat key elements of your examination."
2. "Corroborate important findings with documents and witnesses."
3. "Confirm key clinical findings with appropriate diagnostic tests."
4. "Ask 'blinded' colleagues to examine your patient."

Next, " 'Blind' your assessments of diagnostic test data."

Naturally, "Report evidence as well as inference."

Certainly, "Use appropriate technical aids."

Finally, "Apply the social sciences, as well as the biologic sciences, of medicine."

While the founders of our society were rightly concerned about the ethics of consultation, the Canadian group refers to such situations only indirectly. After all if their directions are followed, there should be little difficulty for patient, physician or consultant in resolving such problems.

One phenomenon our forebears could not anticipate is the academic consultation, both as teaching tool and

Table I Etiology of clinical disagreement

The examiner

- Biologic variation in the senses
- The tendency to record inference rather than evidence
- Ensnarement by diagnostic classification schemes
- Entrapment by prior expectation

The examined

- Biologic variation in the system being examined
- Effects of illness and medication
- Memory and rumination

The examination

- Disruptive environments for the examination
- Disruptive interactions between examiners and examined
- Incorrect function or use of diagnostic tools

as a diagnostic or therapeutic exercise. The academic physician all too often has seen little more of the clinical world than his students or house officers and is occupied primarily with research, appreciating the continuity of disease in his patient more in the abstract than in the actuality.

The satisfactory etiquette for such situations is yet to evolve. The academic team is often engaged in a single medical episode so unbound by time that they sometimes feel compelled to do more than is necessary or can be justified. The problems met within such situations have been recently considered very nicely by Rudd³ whose review deserves careful attention from all involved in consultation and clinical disagreement.

J.H.F.

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2. Department of Clinical Epidemiology and Biostatistics, McMaster University, Hamilton, Ont. Clinical disagreement: II. How to avoid it and how to learn from one's mistakes. *CMA J* 1980;123:613-7.
3. Rudd P. Contrasts in academic consultation. *Ann Intern Med* 1981; 94:537-8.

DOES THE SEBRIGHT BANTAM HAVE THE 'SEABRIGHT-BANTAM SYNDROME'?

Sebright bantam roosters develop female feathering on sexual maturation, a finding which led Albright¹ to postulate that some endocrinopathies could be attributed to failure of end-organ response to stimulation. He classified such patients with endocrine deficiencies as having the "Seabright-Bantam Syndrome." Although there seems to be some difference of opinion as to the preferred spelling — Sebright vs. Seabright

— it cannot be denied that Albright's postulate has been quite fruitful.

Pseudo-hypoparathyroidism differs from hypothyroidism in that patients with the former who are given parathyroid hormone intravenously do not have the expected phosphate diuresis nor do they excrete increased amounts of cyclic AMP. Congenital nephrogenic diabetes insipidus is also a member of the family because patients with it exhibit vasopressin-resistant polyuria and also do not increase cyclic AMP excretion when vasopressin is administered. Thus both can be considered as having a "Seabright-Bantam Syndrome" although the category no longer serves a useful clinical purpose.

But what of the Sebright bantam rooster? Why does he have such problems with his sexual decoration?² Surprisingly, in the Sebright bantam formation of male plumage is not directly under gonadal control. When a mature cock, however, is castrated, female feathering is lost and the male pattern regained. Female plumage is restored when testosterone is then given, but not with dihydrotestosterone treatment. Testosterone is converted in the bantam skin to estradiol which provokes the feminine response but dihydrotestosterone is not so it can maintain male feathering. We really can't tell whether the Sebright bantam has the "Seabright-Bantam Syndrome." Feathers never have the opportunity to respond to enough testosterone for us to find out.

J.H.F.

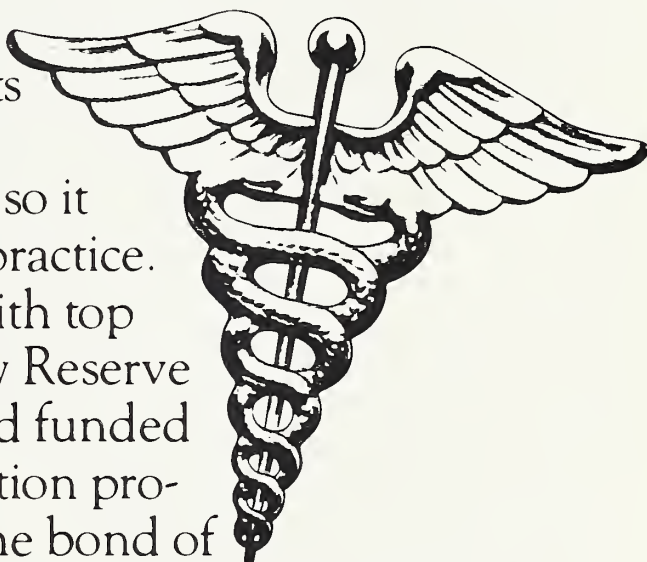
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2. George FW, Noble JF, Wilson JD: Female feathering in Sebright cocks is due to conversion of testosterone to estradiol in skin. *Science* 1981;213:557-9.

It therefore becomes necessary to view the phenomena of disease with a single, cautious, scrutinizing and unprejudiced eye; to trace, as far as can be done, every cause to its source, and to relieve the subject from embarrassing theories and hypotheses. From the limited nature of our powers, the phenomena are all we know; and it is the connection of two facts, in indissoluble and invariable succession, which constitutes the essence of causation, and it is the proper contemplation of this connection, which forms the real and solid acquisitions of science; for the whole operations of nature are nothing more than an uninterrupted series of phenomena in this relation. In tracing the union of a cause with its effect, the mind, from the constant observance of succession, invests the cause with a quality, called power, the result of an instinct, which nature has implanted in us, and it is to the proper estimate of this agent, to the assignment to every body, its proper degree of power, and to the faithful record for the good of others, of the effects it may produce, that men derive character in the pursuit of science, for accuracy of thought or the contrary; and it is also to the proper appreciation of the relative strength of the phenomena of nature, and the development of our resources, according to that appreciation, that history stamps with the epithets of folly or of wisdom, of weakness or of strength, the various nations and ages of the world. —*Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

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From The Desk of The Managing Editor

ONLY YOU CAN BUILD MEMBERSHIP

In March of 1981 the North Carolina Board of Medical Examiners reported having 13,361 registered physicians, 8,639 of whom had North Carolina addresses. In April of 1981 the North Carolina Medical Society's membership totalled 5,454, making a difference of 3,185, the number of North Carolina physicians who are not members of the society. Of the non-members 1,110, almost 35%, live in the Durham-Orange County area; 370, in Forsyth County; 159, in Mecklenburg; 147, in Wake; 122, in Guilford; 118, in Buncombe; 113, in Cumberland; 52, in New Hanover; and 60, in Pitt County. Overall, 2,266, or 71.16%, of the 3,185 non-members live in a 10-county area.*

Competition for the professional's time and money seems to have an effect: these figures show that there is a fairly large group of physicians in our state who are not members of the medical society. Membership recruitment is an on-going, never-ending process, and our Committee on Membership, acutely aware of this fact, continues in its efforts to sign up new members. Some of those efforts include: identification and survey of the non-members, the development of a slide presentation by the Committee on Communications which is available for use as an introduction to the Medical Society, and the re-evaluation of the membership program.

Certainly, it is vital in a membership campaign to define the reasons people do not join the organization. However, some thoughts on why one does join should prove fruitful as well.

*These statistics were compiled by the North Carolina Medical Society staff.

With the encroachment by government on the medical profession, physicians must strive to retain their independence. Physicians want to decide for themselves how and where they practice, but they must strive to be heard above the many voices competing for a say in the direction that medicine will take. Organized medicine provides a voice that can be heard; indeed, it is the voice which speaks for the individual physician.

One must acknowledge that, from this perspective, quantity means strength, unity, effectiveness. While individual action is not to be discouraged, there are many complex issues today which require collective action. Professional standards cannot be set without the input of the profession. In our own state legislature, physicians have seen problems addressed and favorable solutions agreed upon through organized, collective action by their colleagues.

Physicians in organized medicine have reaped the benefits of the various services provided, information exchanged, issues debated and opinions supported. It is important to be a part of the group that is concerned with the practice of medicine and does something about those concerns.

Defining how both members and non-members view the North Carolina Medical Society is a necessary part of membership recruitment. But only members can build membership. In the interest of the physician, in the interest of the patient, in the interest of the public health, call a prospective member and urge him or her to join. For information contact your county medical society or the North Carolina Medical Society, Box 27167, Raleigh, N.C. 27611 (919-833-3836).

A.A.H.

RUDOLF VIRCHOW [1821-1902]

Ever since we recognized that diseases are neither self-subsistent, circumscribed, autonomous organisms, nor entities which have forced their way into the body, nor parasites rooted on it, but . . . the course of physiological phenomena under altered conditions . . . the goal of therapy has had to be the maintenance or the reestablishment of normal physiological conditions.

Disease, Life, and Man, "Standpoints in Scientific Medicine"
(tr. by L. J. Rather)

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1. Ginsburg CM, McCracken GH Jr, Zweighaft TC, Clahsen JC: Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother*

19:1086-1088 (June) 1981.

2. Multicenter trials. Data to be published.

See important information on page after next.

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Bronchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)
Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*
Acute exacerbation of chronic bronchitis caused by *H. influenzae**

*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings Cyclacillin should only be prescribed for the indications listed herein.

Cyclacillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclacillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclacillin is given to a nursing woman.

Adverse Reactions Oral cyclacillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclacillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See WARNINGS) Other less frequent adverse reactions which may occur and are reported with other penicillins are anemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclacillin is not indicated in children under 2 months of age.

Patients with Renal Failure Cyclacillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see DOSAGE AND ADMINISTRATION in package insert).

Dosage (Give in equally spaced doses)

INFECTION	ADULTS	CHILDREN*
Respiratory Tract		
Tonsillitis & Pharyngitis	250 mg q.i.d.	body weight < 20 kg (44 lbs) 125 mg q.i.d. body weight > 20 kg (44 lbs) 250 mg q.i.d.
Bronchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults.

†depending on severity

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Correspondence

LETTER FROM THE EDITOR

It has been brought to the editor's attention that his Report from West Germany in the October issue of the *Journal* contained a serious error. According to that report subcutaneous infections were available in West Germany in 1974, at the remarkably low price of 3 DM. Intravenous infections were somewhat dearer, priced at 4 DM. Of course injections, not infections, was the word intended. The eminent Viennese speculator, Dr. Sigmund Freud, gave little or no at-

tention in his *Psychopathology of Everyday Life* to typographical errors, being most concerned with slips of the tongue. So the editor can offer only an apology, not an explanation, for such a serious lapse.

While on the subject of injections, it is worth noting that we have given little attention to the benefactors of mankind who devised hollow needles and developed them for clinical use else the subject would not have come up at all.

J.H.F.

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Bulletin Board

What? When? Where?

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME programs sponsored or cosponsored by these schools automatically qualify for AMA Category 1 credit toward the AMA's Physician Recognition Award, and for North Carolina Medical Society Category A credit. Where AAFP credit has been requested or obtained, this also is indicated. 2. The "place" and "sponsor" are indicated for a program only when these differ from the place and source to write "for information."

April 2-3

"Frank R. Lock Symposium in Obstetrics & Gynecology"

Place: Bowman Gray School of Medicine

Fee: \$150

Credit: 10 hours. AAFP applied for

Info: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

April 5-6

"Genetic Mechanisms in Chemical Carcinogenesis"

Place: Chapel Hill

Info: Ms. Mimi Minkoff, Cancer Research Center, Box 30, MacNider Bldg., UNC-CH, Chapel Hill, NC 27514

April 6

"Greensboro Academy of Medicine Spring Symposium — Combined Approach to Common Medical Problems"

Place: Jefferson Standard Country Club, Greensboro

Credit: 6 hours

Info: W. H. Turner, M.D., 919-373-1383

April 5-7

"Options and Controversies in Coronary Disease"

Place: Pinehurst Hotel and Country Club

Fee: \$225

Credit: 18 hours. AAFP will be applied for

Info: Betty Neilson, 231 MacNider Bldg., 202H, UNC-CH School of Medicine, Chapel Hill, NC 27514

April 14

"Infectious Diseases Update 1982"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$50

Credit: 6 hours. AAFP applied for

Info: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, NC 27834

April 19-22

"Current Concepts in Diagnostic Imaging"

Place: Duke University Medical Center

Fee: \$400 (\$200 if in training)

Credit: 30 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology—Box 3834, Duke University Medical Center, Durham, NC 27710

April 23-24

"Practical Pediatrics"

Place: Bowman Gray School of Medicine

Fee: \$50

Credit: 9 hours. AAFP applied for

Info: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

April 24-25

"7th Annual Radiology Update"

Place: Bowman Gray School of Medicine

Fee: \$75

Credit: 9 hours

Info: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

April 29

"11th Annual New Bern Symposium: Emergency Medicine"

Place: Ramada Inn, New Bern

Info: William B. Hunt, Jr., M.D., Symposium Director, P.O. Box 2157, New Bern, NC 28560

May 14-15

"Chronic Disease Prevention and Health Promotion"

Place: Asheville

Info: Paula Schubert, Office of Continuing Ed., UNC-CH School of Public Health 251-H, Chapel Hill, NC 27514, 919-966-4032

May 19-21

"North Carolina Heart Association Scientific Sessions"

Place: Winston-Salem

Info: The N.C. Heart Association, PO Box 2636, Chapel Hill, NC 27514, 919-968-4453

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May 21

"Pediatrics Day 1982"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, NC 27834

May 21-23

"Eleventh Annual Pediatric Pulmonary Disease Conference"

Place: Searle Center, Duke University Medical Center

Fee: \$50

Credit: 12 hours

Info: Alexander Spock, M.D., Box 2994, Duke University Medical Center, Durham, NC 27710, 919-681-3364

Out of State — Southeastern Region

March 30-April 2

"Recent Advances in Gastroenterology: Pathophysiology, Diagnosis and Treatment"

Place: Bethesda, Maryland

Info: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104

March 31-April 2

"Current Concepts of Clinical Infectious Diseases"

Place: Charlottesville, Virginia

Info: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104

March 31-April 2

"Internal Medicine-Advances and Review"

Place: Baltimore, Maryland

Info: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104

April 4-6

"National Conference on Primary Care"

Place: Jackson, Mississippi

Credit: 15 hours, AAFP

Info: Nellie Brown, NRPCA, Box 1211, Waterville, ME 04901-1211, 207-873-7784

April 16-18

"EKG Interpretation and Arrhythmia Management"

Place: Williamsburg, Virginia

Fee: \$245

Credit: 13 hours, Category I; AAFP

Info: International Medical Education Corp., 64 Inverness Drive East, Englewood, Colo. 80112, 800-525-8651

April 22-24

"Pediatric Springfest"

Place: Williamsburg, Virginia

Info: Kathy E. Johnson, Box 48, MCV Station, Richmond, VA 23298, 804-786-0494

April 23-24

"Arrhythmia and Cardiac Ischemia: Diagnosis and Management"

Place: Atlanta, Georgia

Fee: \$245

Credit: 13 hours, Category I; 13 hours, AAFP

Info: International Medical Education Corp., 64 Inverness Drive, East, Englewood, Colo. 80112, 800-525-8651

April 23-25

"Emergency Medicine for the Primary Care Physician"

Place: Williamsburg, Virginia

Fee: \$195

Credit: 17 hours

Info: Glenda Snow, Box 48, MCV Station, Richmond, VA 23298, 804-786-0494

April 25-29

"American College of Cardiology Annual Scientific Session"

Place: Atlanta, Georgia

Info: Meeting Services Dept., American College of Cardiology, 9111 Old Georgetown Road, Bethesda, MD 20814

May 5-8

"63rd Annual Meeting of the Virginia Society of Ophthalmology and Otolaryngology, Inc."

Place: Williamsburg, Virginia

Info: Donna Strawderman, 4205 Dover Road, Richmond, VA 23221, 804-353-2721

May 12-14

"Clinical Auscultation of the Heart"

Place: Georgetown University Medical Center, Washington, D.C.

Info: Extramural Programs Department, American College of Cardiology, 911 Old Georgetown Road, Bethesda, MD 20014

June 10-12

"Rehabilitation of the Brain-Injured Adult"

Place: Williamsburg, Virginia

Info: Ellen F. Walsh, School of Allied Health Professions, Box 233, MCV Station, Richmond, VA 23298, 804-231-9011


The items listed in the above column are for the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh 27611, two months prior to the month in which they are to appear. A "Request for listing" form is available upon request.

North Carolina Medical Society Auxiliary


WOMEN PHYSICIANS AND THE IMPLICATIONS FOR THE AUXILIARY

A study of the 126 United States medical schools by the Association of American Medical Colleges shows that female enrollments in medical school are at a record high. The number of women has increased consistently over the past ten years. The 1981-82 first year class nationwide is composed of 5,317 women or 30.8% of the total. In 1969-70, 952 women (9.2% of the total) were accepted to the first year class of medical schools in the United States.

In 1973 the AMA Auxiliary Bylaws were revised to include male spouses in the membership of the AMA Auxiliary. Eight years ago, the AMA Auxiliary House of Delegates approved a name change from "Woman's Auxiliary to the AMA" to the "AMA Auxiliary." By 1981 approximately 65 men had joined the AMA




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Auxiliary. In the November issue of FACETS, the AMA Auxiliary magazine, an article on the future of the AMA Auxiliary cites the potential for more male members because of the increasing numbers of female physicians.

Why would a male spouse join the auxiliary, an organization that has been identified as, and has been, a woman's organization for 50 years? There will be those who feel that they want to support their wife's profession and become better acquainted with the medical community. Others may see it as a way to do meaningful volunteer service in their community. Male physicians who are married to female physicians may view their memberships in both the medical society and auxiliary as an effective communications bridge. And there are always those who will join to be the first male in the group and "just for the fun of it."

In the May 1981 issue of FACETS the article, "Male Auxiliary Members: Who They Are and Why They're Involved," reported that "the vast majority

of auxiliaries have been delighted with their new male auxiliarians, welcoming them with open arms." It is logical that the male members will bring different perspectives, skills and knowledge acquired in their respective fields. One county auxiliary president in Texas says, "It's a joy to work together because we complement each other so well."

Other positive results might be a different concept of auxiliary work by the public since the addition of men would eliminate the stereotype of a "woman's club." Instead, the auxiliaries would receive well-deserved credit for community projects and service.

For those auxiliaries that see a need to interest men in membership, the first step would be scheduling meetings so that a broader based membership could be achieved. This is becoming a topic of discussion among women themselves since so many auxiliary members are gainfully employed and both older and younger prospective members cannot attend daytime meetings. Programs also would have to appeal to both

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00 million worth of
overnment-funded research
n hypertension
worth reading about?



men and women. As with any prospective member, the greatest incentive for joining will be a personal invitation delivered with a sincere desire to integrate male members into the organization.

As the number of female physicians increases, the number of prospective female members for the AMA Auxiliary will decline. To keep the auxiliary a vital,

growing organization it will be necessary to attract male spouses. The National AMA Auxiliary has recognized this need for nine years — since male spouse membership was approved. It is time for county auxiliaries to consider how they can meet the challenge.

Anita D. Taylor
Winston-Salem, N.C.

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News Notes

Duke University Medical Center

The new DUPAC (Duke University's Preventive Approach to Cardiovascular Disease) Activities Center opened in January. The center is located on top of Wallace Wade Stadium on the University's West Campus.

The DUPAC Activities Center — which also houses the press box for the Blue Devils' home games — provides 30,000 square feet of space for health-related activities. The new center makes it possible for the first time for DUPAC to offer memberships to persons in the Durham community who are not necessarily at

risk of heart disease, but who are interested in a medically supervised health enhancement program.

Included in the center are a swimming pool for tethered and lap swimming, air conditioned locker rooms with individual kit lockers, dressing rooms, stationary bicycles, a banked indoor jogging track, exercise equipment and Jacuzzi baths and saunas for men and women. The center also has a cafeteria which will serve well-balanced breakfasts and lunches for DUPAC members Mondays through Fridays.

Dr. R. Sanders Williams, assistant professor of cardiology is medical director of DUPAC. Paul Koisch is administrative director.

DUPAC memberships are \$400. Additional family members pay \$350 a year to join.

A physician known internationally for his expertise in health policy matters has been appointed director of

1977, when
the Veterans Administration
compared Step-2
regimens in 450 mild
hypertensive patients,
which regimen was
proven most effective?'



Duke University's Center for Health and Clinical Policy. Research in health policy and courses in health policy will be offered through the center, which formally opened in January.

Dr. David M. Eddy is an advisor or consultant to numerous national and international health organizations including the World Health Organization, the National Cancer Institute and the National Commission for Cancer Prevention and Detection.

He is the first physician to receive the Lanchester Prize, given by the Operations Research Society of America (ORS) for the most important contribution to the field of applied mathematics and systems analysis. He received the prize this fall for his book on screening for cancer. He is the author of the American Cancer Society report that led to the new recommendations for cancer screening.

"We are fortunate to have an internationally recognized specialist such as Dr. Eddy to direct this new program," said Dr. William G. Anlyan, vice president for health affairs. "He was selected because of his active interest in health policy and his active interest in health policy research. It is crucial that private medical centers such as Duke play an active role in influencing health care policy."

Eddy said each of the center's professors also will have appointments in other departments within the university. "The courses offered through these departments will be designed to complete the curriculum in health policy analysis here at Duke," he said.

A Duke University Medical Center researcher says a disease afflicting homosexual men may be the result of drug abuse — not repeated exposure to a virus, as some researchers contend.

But Dr. David T. Durack of Duke's communicable disease section said it would be hard to discover which drug, if any, reduces natural immunity among the victims because some victims use recreational drugs.

Three studies reported Dec. 10 in the *New England Journal of Medicine* documented the disease in 180 victims, 165 of which were young homosexual men. So far, 75 of the victims have died, and most of the deaths have been attributed to rare forms of pneumonia and cancer.

Patients showed an unusual resistance to treatment, Durack said. About a dozen microbes considered harmless in normal adults became life-threatening due to the mysterious breakdown of the body's disease-fighting mechanism, he said.

Durack said in-depth research currently is being conducted by the Centers for Disease Control in Atlanta to unravel the individual cases and come up with a common factor for the disease outbreak.

Meanwhile, he said, young homosexual men living in large cities and having many sexual partners have the greatest risk and should be wary of any symptoms.

"Someone like that who detects a slight weight loss, a fever or any kind of infection should consider seeing a doctor," Durack said. "If he develops pneumonia, I

would advise that the doctor investigate it very carefully."

A distinguished professorship has been established at the medical center to honor a recently retired Duke neurosurgeon, Dr. Guy Leary Odom. Odom, a James B. Duke Professor of Neurosurgery, retired from active faculty status Aug. 31 after 38 years at Duke.

The distinguished chair will support a full professor in neurosurgery.

"The Odom Chair is extremely important to Duke because it will perpetually honor a contributor who has risen to the very top of his field, nationally and internationally, as a teacher, investigator and clinical neurosurgeon," said Dr. David C. Sabiston Jr., James B. Duke Professor of Surgery and chairman of the department. "Moreover it will establish an unusually high standard of excellence far into the future for those who follow him in neurosurgery at Duke."

Odom served as chief of the division of neurosurgery from 1960-1976 and was appointed James B. Duke Professor of Neurosurgery in 1974. He is an active member of more than 30 professional committees and societies.

W. David Sedwick, assistant medical research professor in the departments of Medicine and Microbiology, received a \$67,157 research grant from the National Cancer Institute. He is studying "Antifolate-Induced Misincorporation of UDR in Human Cell."

Roger J. Kurlander, assistant professor of hematology and medical oncology in the Department of Medicine, received an \$81,398 grant for his program "Depletion of PC Receptors during Immune Clearance" from the National Institute of Allergy and Infectious Diseases.

Rebecca H. Buckley, professor in the departments of Pediatrics and Microbiology and Immunology, received a \$73,417 grant from the National Institute of Allergy and Infectious Diseases. Buckley is studying "Immunoregulation in Atopic Eczema."

Ilene C. Siegler, associate professor of medical psychology and training coordinator for the Center for the Study of Aging and Human Development, received a \$96,375 grant from the National Institute of Mental Health. Siegler is studying adult human development and adaption.

George K. Michalopoulos, assistant professor in the Department of Pathology, received a \$103,870 grant from the National Cancer Institute. Michalopoulos is studying "Cell Culture and Transplantation of Human Hepatocytes."

Ralph R. Bollinger, assistant professor in the division of general and thoracic surgery, received a \$48,943 grant from the National Institute of Allergy and Infectious Diseases to study "Tolerance Induction with HC Antigen-Conjugates."

Charles Tanford, professor in the Department of

Biochemistry, received an \$80,150 grant to study protein interactions and biological function. The grant was awarded by the National Institute of Arthritis, Metabolism and Digestive Diseases.

Lee Tyrey, associate professor in the Department of Obstetrics and Gynecology, received a \$74,391 research grant from the National Institute on Drug Abuse. Tyrey is studying "Cannabinoid Effects on Female Reproductive Function."

Paul L. Modrich, associate professor of biochemistry, received a \$38,362 grant from the National Cancer Institute for his program, "Molecular Basis of Ecori DNA Restriction Modification."

Richard D. Weiner, assistant professor of biological psychology in the Department of Psychiatry, received a \$75,644 grant from the National Institute of Mental Health. Weiner is studying the long term effects of electroconvulsive therapy.

Walter R. Guild, professor in the Department of Biochemistry, received a \$60,433 grant for the studies

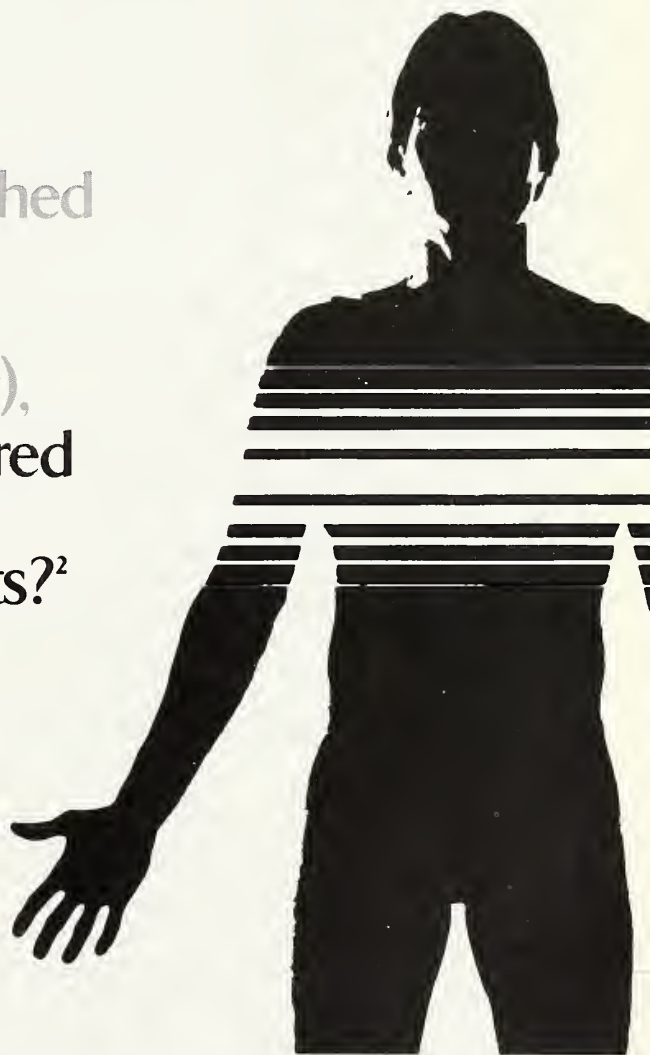
in "Drug Resistance and Conjunction in *Pneumococcus*" from the National Institute of Allergy and Infectious Diseases.

John W. Moore, professor of physiology, received a \$68,650 grant from the National Institute of Neurological and Communicative Disorders and Stroke. Moore is studying "Physiology of Excitable Membranes."

David L. Straight, research associate in the division of general medicine, was awarded a \$19,040 research service award from the National Heart, Lung and Blood Institute to study thrombosis.

David S. Pisetsky, assistant professor in the division of rheumatic and genetic diseases and the division of immunology, received a \$33,200 grant from the National Institute of Arthritis, Metabolism and Digestive Diseases. Pisetsky is studying idiotype expression in murine autoimmune disease. Pisetsky also received a \$24,200 grant from the March of Dimes Birth Defects Foundation.

in 1979, when results were published
for the five-year, 10,000-patient
Hypertension Detection and
Follow-up Program (HDFP study),
which Step-2 regimen was preferred
and was deemed effective
without significant adverse effects?'



Dolph O. Adams, professor of pathology, received a \$397,783 grant from the National Cancer Institute for his project, "Macrophage Activation: Development and Regulation."

Mary A. Morris, assistant professor of pediatrics, received a \$16,369 research award from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases for her study of diabetes mellitus.

Rona L. Levy, in the division of medical psychology, received a \$35,000 national research service award from the National Heart, Lung and Blood Institute to study hypertension.

Michael K. Pasque, in the division of general and thoracic surgery, received a \$20,468 national research service award from the National Heart, Lung and Blood Institute to study coronary heart disease.

Fidel Ramon, assistant professor in the Department of Physiology, received a \$2,442 grant from the National Heart, Lung and Blood Institute for his program, "A Model System for Cardiac Action Potentials."

Nels C. Anderson Jr., associate professor in the Department of Physiology and assistant professor of obstetrics and gynecology, received a \$36,872 grant for his program, "Biophysics of Parathyroid Calcium Sensing Mechanism" from the National Institute of Arthritis, Metabolism and Digestive Diseases.

John V. Salzano, professor of physiology, received a research award from the National Heart, Lung and Blood Institute for \$54,092. The funds will support research on "Regulation of Airway Smooth Muscle Tone."

Thomas R. Snow, assistant medical research professor of physiology, received a \$52,078 research award from the National Heart, Lung and Blood Institute to study "Mechanisms of Myocardial Response to Hypoxia."

Dolph O. Adams, professor of pathology, was awarded a research grant of \$70,862 from the National Cancer Institute to study tumoricidal effects of macrophages.

James E. Nidel, assistant professor of hematology and medical oncology, received a \$92,694 grant from the National Institute of Allergy and Infectious Diseases for his program "Human Myeloid Chemotactic Receptor: Structure-Function." He also received a Basil O'Connor Starter Research Grant for \$24,988 from the March of Dimes Birth Defects Foundation to study the development and nature of cell-surface receptors.

Ralph Snyderman, professor of medicine, received a \$49,241 service award from the National Institute of Allergy and Infectious Diseases for work on inflammatory and immunological diseases.

John J. Gallagher, professor of cardiology, received a \$133,011 research award from the National Heart, Lung and Blood Institute for the study of arrhythmias.

Saul M. Schanberg, professor of pharmacology, received a National Institute of Mental Health award for \$175,645 to study drugs, hormones and brain function.

James A. Green, assistant medical research profes-

sor in the division of medical psychiatry, received a \$13,034 grant from the National Institute of Mental Health. The grant will support study of "Visual Attention Vocalization and Social Communication."

D. Bernard Amos, professor of immunology, received from the National Institute of Allergy and Infectious Diseases a \$31,995 grant for his study, "Fundamentals of the Mechanisms of Homograft Immunity."

Wolfgang K. Joklik, professor and chairman of the Department of Microbiology and Immunology, was awarded a \$177,902 research grant from the National Institute of Allergy and Infectious Diseases. Joklik will investigate "Macromolecular Synthesis in Virus-Infected Cells."

William W. Anderson, in the Department of Pharmacology, received a \$19,040 national research service award from the National Institute of Neurological and Communicative Disorders and Stroke. Anderson is studying neurophysiology.

Bowman Gray School of Medicine Wake Forest University

Dr. Courtland H. Davis Jr., professor of neurosurgery at the Bowman Gray School of Medicine, has been named chief of professional services at North Carolina Baptist Hospital.

He succeeds Dr. Robert N. Headley, professor of medicine (cardiology), who held the position for four years. Headley will continue to serve as an associate chief of professional services.

Dr. Thomas H. Irving, professor and chairman of the Department of Anesthesia and a former chief of professional services, also serves as an associate chief of professional services.

Davis was appointed to the Bowman Gray faculty in 1952, and has served as an associate chief of professional services since 1975. He is a past president of the Neurosurgical Society of America and the Southern Neurosurgical Society. Currently, he is vice president of the American Academy of Neurological Surgery.

The National Cancer Institute has awarded a \$1 million grant to the Bowman Gray School of Medicine to train cancer researchers.

The program, supported by the five-year grant, will provide three years of additional training to those who already hold the Ph.D. or M.D. degrees and four years of training for students pursuing the Ph.D. degree.

The grant supports the type of academic training which is critical if progress is to be made in understanding and treating the many kinds of cancer.

The multidisciplinary program involves the departments of biochemistry, pathology, microbiology and immunology, internal medicine, radiology and obstetrics and gynecology.

Initially, four graduate students and three postdoc-

toral fellows will be enrolled in the training program. Eventually, 14 people will be in the program each year.

The four areas of cancer research which the program will emphasize are oncogenesis, cancer cell biology, the interaction of tumors and cancer victims, and experimental therapeutics. They are the areas of expertise within the Bowman Gray's Cancer Research Center.

A basic research project at Bowman Gray has uncovered evidence in animals that the brain's aging process can be slowed through drug therapy.

The work was conducted by Dr. Philip Landfield, a neurophysiologist, and by a graduate student and laboratory technician.

The research, supported by a grant from the National Institute on Aging, opens up the possibility that

the human brain aging process eventually may respond to drug therapy. The findings are the first based on comprehensive morphologic and behavioral studies to show that brain aging is not a fixed process.

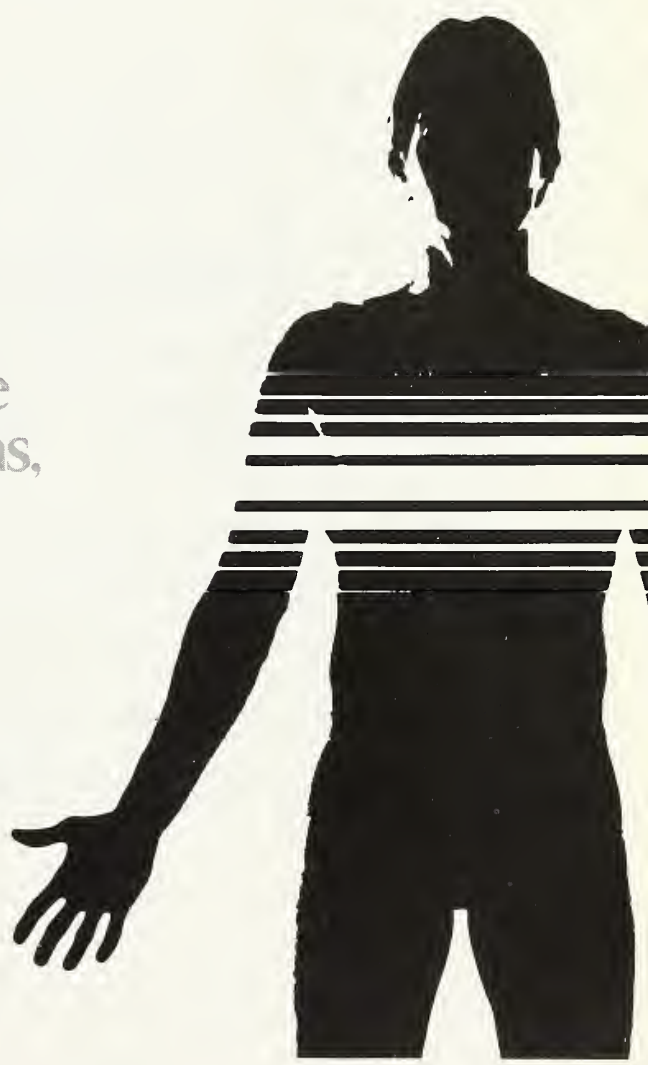
In work with rats, Landfield's group demonstrated that steroids produced by the adrenal gland have a role in causing brain tissue to age and that the removal of the adrenal gland has a significant effect on retarding brain aging.

The work also showed that two chemical compounds which stimulate brain cell activity also retard the brain aging process.

Removal of the adrenal gland produced the most dramatic effects on the brain. Giving the chemical compounds produced less dramatic but more consistent results, and they improved the learning abilities in aged rats.

Landfield's work was reported in the journal "Science."

in 1980, when the
oint National Committee
n Detection, Evaluation, and
reatment of High Blood Pressure
ublished their recommendations,
which Step-2 regimen best met
their criteria for effectiveness,
afety, simplicity of titration,
onvenience, and economy?³



Two prominent North Carolina industrialists have been appointed to the Board of Visitors of the Bowman Gray/Baptist Hospital Medical Center.

They are Claude S. Ramsey Jr. of Asheville, chairman of the board and president of Akzona Inc., and Herbert Brenner of Winston-Salem, executive vice president of Brenner Companies, Inc.

The new members join 15 other business, professional and civic leaders already on the board.

The Board of Visitors is an official advisory council to the administration of the medical center and to the Boards of Trustees of Wake Forest University and North Carolina Baptist Hospital.

Three assistant professors and several instructors have been appointed to the fulltime faculty at Bowman Gray.

The assistant professors are Dr. Maureen M.

Aaron, family medicine; Dr. John S. Parks, comparative medicine; and Dr. Rosalind M. Vaz, pediatrics.

Aaron will develop a geriatrics curriculum for residents in the Department of Family and Community Medicine. She holds the M.D. degree from the University of Saskatchewan College of Medicine.

Parks is a biochemist and biophysicist whose work at Bowman Gray will be in the school's Specialized Center of Research (SCOR) in Arteriosclerosis. His interest is lipoprotein metabolism and biophysical studies of non-human primates. He holds the M.D. and Ph.D. degrees from Wake Forest University.

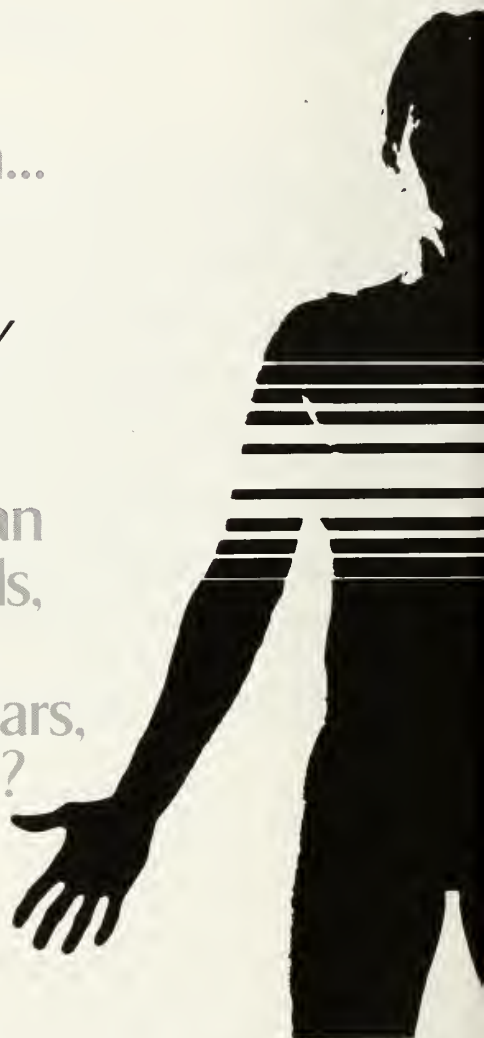
Vaz will supervise the new Brenner Center for Adolescent Medicine at the Medical Center. She holds the M.D.C.M. degree from McGill University in Montreal.

Those appointed as instructors are Dr. Gloria J. Colurso, physiology and pharmacology; Dr. Carolyn F. Pedley, medicine (general medicine/

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endocrinology); Richard E. Snow, allied health (physician assistant program); and Dr. Michael V. Ward, comparative medicine.

Roy Gallinger, a second-year medical student at Bowman Gray, has received a community service award from the CIBA Pharmaceutical Co.

The award, which consists of books from the CIBA collection of medical illustrations by Dr. Frank Netter, recognizes Gallinger's work last summer in a health project with migrant farm workers in Newton Grove, N.C.

Gallinger spent eight weeks as a member of a medical screening team at the Tri-County Clinic in Newton Grove. The team screened migrant workers for occupational illnesses and provided them with transportation for medical appointments.

The project was sponsored by the North Carolina Rural Health Coalition.

Bowman Gray research suggests that aggressive monkeys develop more coronary heart disease than submissive monkeys only if they live in stressful social situations that encourage competition.

In stable, non-threatening social environments, competitive and dominant monkeys have significantly less coronary disease than their subordinates.

The research was headed by Dr. Jay R. Kaplan, assistant professor of comparative medicine. He explains that the research is relevant to humans because the aggressive, competitive individual has been thought of as prone to coronary heart disease and heart attacks. But Kaplan's work suggests that that is most likely to be true in highly competitive environments.

And there's more proof on the way!

1982 will see the completion of the Multiple Risk Factor Intervention Trial (MRFIT)—a six-year, 12,000-patient study assessing the factors that increase risk of cardiovascular disease. For the management of hypertension, the preferred Step-2 regimen in this study is reserpine-thiazide.

In 1978, in a preliminary report presented to the Epidemiology Section of the American Heart Association (Dallas, Nov 1978), after 12 months of the trial, fewer patients (5.3%) treated with reserpine suffered depression than even the untreated control group (7.7%)!

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According to Kaplan, the work is the first to corroborate in a relevant animal model the interaction of social environment and social status that is thought to be important in the development of human coronary heart disease.

Dr. M. Gene Bond, assistant professor of comparative medicine, has been named co-chairman of an interdisciplinary "Workshop on Quantitative Evaluation of Atherosclerosis" to be held in Silver Spring, Md.

Margaret Ann Chatham, instructor in family and community medicine (nurse education) and assistant director of nursing education for the Northwest AHEC, has been elected secretary of the North Carolina Nurses Association for 1982-84. She also was elected a delegate to the 1982 national convention of the American Nurses Association.

Dr. George Podgorny, clinical associate professor

of surgery (emergency medicine) was elected chairman of the Forsyth County/City of Winston-Salem Advisory Council of the Emergency Management Agency at its annual meeting.

Robert E. Rose, controller in the Bowman Gray School of Medicine's Division of Resource Management, has been elected to a regional office in the Association of American Medical Colleges' Group on Business Affairs. He was elected chairman-elect of the Southern region. He also is chairman of the External Relations Committee of the Group on Business Affairs.

Dr. Elias G. Theros, professor of radiology, has been named editor-in-chief of the American College of Radiology Atlas of Tumor Radiology. The atlas will consist of about 20 diagnostic texts to be written during the next five years by authors chosen for their expertise in particular areas in the radiologic diagnosis of neoplasms.

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Brief Summary of Prescribing Information (12) 10/27/78

For complete information consult Official Package Circular.

WARNING

This fixed combination drug is not indicated for initial therapy of hypertension. Hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension is not static, but must be reevaluated as conditions in each patient warrant.

CONTRAINDICATIONS

Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or

without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy

Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia

(especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

Scientists at the University of North Carolina at Chapel Hill have found new evidence that only one or two episodes of heavy drinking by a woman early in pregnancy can seriously damage her unborn child.

The evidence, which comes from animal studies, indicates that the condition known as fetal alcohol syndrome may start as early as the third week after conception, well before most women suspect they are pregnant.

Drs. Kathleen Sulik of the School of Medicine and Malcolm Johnston of the Dental Research Center conducted their experiments on laboratory mice.

"Most scientists who study alcohol-induced birth defects have been concerned with chronic exposure to alcohol, but with that approach it has been impossible to pinpoint the stages in pregnancy when injury oc-

curs," Sulik explained. "Most of them have believed that if you damage the embryo very early in development, then it cannot survive."

For the first time, she and Johnston have shown that mouse embryos can survive early injury by alcohol and be born with subtle defects in appearance remarkably similar to those seen in human fetal alcohol syndrome.

In children, the defects appear as smaller eyelid openings, flat nasal bridges, shorter noses and longer upper lips. Mental retardation and hyperactivity are the most serious results.

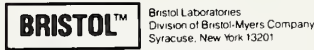
Students who have received federal loans to attend the School of Medicine at the University of North Carolina at Chapel Hill have a loan repayment rate that is significantly better than the national average.

As of June 30 of this year, 479 of the medical school's former students were in the process of repaying funds borrowed under the Health Professionals Student Loan Program. Twenty-three of those

ADVERSE REACTIONS
Hydroflumethiazide
Skin-rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation.
Reserpine
Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares.

USUAL DOSE
1 tablet b.i.d.
SUPPLIED
Bottles of 100 and 1000 scored 50 mg. tablets.

References:
1. Propranolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
2. Five-year findings of the hypertension detection and follow-up program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. Hypertension Detection and Follow-up Program Cooperative Group. *JAMA* 242:2562-2571, 1979.
3. The 1980 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Intern Med* 140:1280-1285, 1980.



borrowers were delinquent in their payments, for a delinquency rate of 4.8%.

The UNC-CH medical school's loan collection rate was 15th best among the 32 medical schools nationwide that responded to a survey conducted by the federal Health Services Administration. The average delinquency rate was 15%. For the purposes of this survey, borrowers were considered delinquent if they were more than 30 days behind in their loan payments.

Clarence M. Stover Jr., associate dean for administration of the UNC-CH medical school, said the school's good loan collection rate can be attributed to several factors.

"The high quality of the operation of the university's student aid personnel ensure that this loan program is administered efficiently," Stover said. "We also believe that our good record in this area reflects the fact that we have a very high caliber of medical students who try to live up to their obligations."

A total of \$2.17 million has been borrowed by UNC-CH medical students under the federal loan program, and only \$22,005 of that amount — about one percent — was past due at the time of the school's last report on the program.

"These loans are exceedingly important to many of our students," said Dr. Stuart Bondurant, dean of the medical school. "So we take our responsibilities regarding this program very seriously and do our best to see that these loans are repaid rapidly."

"If this program were ever lost, many qualified students from disadvantaged and even middle-income

families would be unable to pursue careers in medicine," Bondurant added.

Of the 641 students currently enrolled in the UNC-CH School of Medicine, 59 have received federal loans.

Dr. Eugene S. Mayer recently completed giving the Area Health Education Center (AHEC) program a complete checkup, and the innovative program was found to be healthy and thriving.

Between February and July of this year, AHEC Director Mayer and various members of his staff traveled to all nine AHEC regions and visited 33 towns. The site visits included one day in the regional offices and a second day meeting with health professionals and officials in at least two small towns in the area.

The following AHEC program accomplishments were noted:

- A network of nine AHECs now is functioning in partnership with the four university medical centers in the state.

- Community-based continuing education is accessible to health practitioners and support personnel throughout the state.

- A network of libraries and learning resource centers now connects almost all community hospitals to an AHEC and, in turn, to a university health sciences library.

- New or renovated educational facilities have been completed in 33 sites across the state.

- Cooperative assistance has been provided to other statewide initiatives concerned with the education, training, and retention of health professionals and support personnel.

Rehabilitation specialists at the medical center in Chapel Hill and their counterparts in Mexico will visit each other and share information under a cooperative program being established by the University of North Carolina at Chapel Hill and Mexican health officials.

The program is an outgrowth of a recent visit to Chapel Hill by Dr. Alicia Castaneda, director of rehabilitation training for the Mexican government. She attended a seminar on "functional electrical stimulation" sponsored by the Department of Physical Therapy at North Carolina Memorial Hospital. The seminar taught physical and occupational therapists how to use electrical stimulation to re-educate and strengthen muscles in patients who have suffered nerve damage.

Physical therapist Mike Thomas, spokesman for the seminar organizing committee, said Castaneda's visit was quite productive. "I think we have made a good impression on each other, and she has collected a lot of information to take back with her."

"I think this is the beginning of a very mutually beneficial exchange," Thomas said.

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Please see next page for a summary of prescribing information

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INDICATIONS: Ru-Vert is indicated as an adjunct therapy in the symptomatic treatment of acute or chronic vertigo.

CONTRAINDICATIONS: Convulsive disorders or known history of sensitivity to any of the listed active ingredients. Because of the vasodilating action of nicotinic acid, Ru-Vert should not be used in patients with hypotension.

WARNINGS: The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

PRECAUTIONS: Although there are no absolute contraindications to pentylene-tetrazolol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of Ru-Vert who have heart disease. While pentylene-tetrazolol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

Pheniramine maleate, like other antihistamines, may produce sedative side effects in certain patients.

Transient vasodilatation due to rapid absorption of nicotinic acid may produce facial flushing and a sensation of warmth. These effects may be ameliorated by recommending that Ru-Vert be taken following meals or with food.

ADVERSE REACTIONS: Pentylene-tetrazolol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylene-tetrazolol.

DRUG ABUSE: Drug dependence has not been reported with Ru-Vert.

OVERDOSAGE: Signs and symptoms of acute overdose may be due primarily from overstimulation of the central nervous system and from excessive vasodilatation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage.

Intensive care must be provided to maintain adequate circulation and respiratory exchange.

DOSEAGE AND ADMINISTRATION: The recommended dosage of Ru-Vert for vertigo or motion sickness is 1 or 2 tablets three times a day with meals or light snacks.

This drug is not for use in children under 12 years of age.

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pital has been providing medical support for Orange County's emergency services on an informal basis.

This summer that relationship was made official. The hospital signed an agreement with the county commissioners to provide free training and medical supervision for both the Orange County and South Orange rescue squads.

Dr. Thomas Griggs is director of the hospital's Emergency Medical Technician training program.

He explained that, under the agreement with the county, hospital personnel train rescue squad members above the basic EMT level.

"We are responsible for training those who are permitted to start IV solutions in the field, on orders from a physician at the hospital. We also train paramedics, who are certified to start IVs, administer medications and do cardiac defibrillation on heart attack victims, also under close medical supervision."

The hospital has designated a nurse, Lucy Fort, to be fulltime coordinator of the EMT training program.

Helping families cope with the normal changes that occur during a divorce is the focus of a study at the Department of Psychiatry.

"We want to educate people about what they can expect during a divorce, about the feelings they may have and how their children may feel," said Dr. Nancy Warren, assistant professor of psychology and project director.

"Divorce occurs so frequently now that by 1990, 30% to 40% of all children will have had some experience in a single parent home," said Dr. Robert Grew, project co-director. "Divorce isn't a single event. It's a full process of change for a family — a change that is largely predictable."

This normal, predictable process is what Warren, Grew and associates in the School of Medicine are studying. They hope to find out what type of educational support program works best while providing a needed service for single parents.

The program focuses on an "off-the-wall period of adjustment, which usually is quite lengthy, usually two or three years," Grew said.

The continuing study, now in its second year, is a cooperative effort between the UNC-CH Department of Psychiatry and the Orange-Person-Chatham Mental Health Center. It is being funded for three years by the National Institute of Mental Health.

Dr. Raymond P. White, associate chief of staff and associate dean of the medical school, received the Distinguished Service Award of the Dental Foundation of North Carolina Dec. 4.

Former dean of the School of Dentistry, White was given the award for his service as ex-officio member of the foundation's board of directors and executive committee.

Larry R. Churchill has been promoted to associate

professor of social and administrative medicine effective Jan. 1.

The appointments of two faculty members to the School of Medicine's Department of Surgery have been announced by Chancellor Christopher C. Fordham III.

Drs. Alfred R. Hansen and Blair A. Keagy were both appointed assistant professors of surgery effective Dec. 1.

Hansen has been a visiting assistant professor here since June, and he has been at N.C. Memorial Hospital since 1977, most recently as acting director of emergency room and outpatient surgical services. Previously he held faculty or research appointments at the University of Minnesota, Riker Research Laboratories and the University of Iowa.

A Montana native, he earned his B.S. in 1965 from Michigan Technological University and his M.S. in 1968, Ph.D. in 1970 and M.D. in 1977 from the University of Iowa.

Keagy returns to Chapel Hill after having held several positions here from 1970-78. He interned and held residencies at N.C. Memorial Hospital and was a fellow and part-time instructor in the School of Medicine during that time.

From 1978-81 he was an associate in cardiovascular and thoracic surgery at Geisinger Medical Center in Danville, Pa.

A Pennsylvania native, he earned his B.A. in 1966 from Duke University and his M.D. in 1970 from the University of Pittsburgh.

Dr. John J. Lemasters, an associate professor of anatomy at the University of North Carolina at Chapel Hill, has received an established investigatorship award of the American Heart Association.

Lemasters' primary field of study is bioenergetics, which deals with the transformation of energy within living organisms. Not only has his research increased the scientific understanding of cell and molecular biology, but also laboratory techniques he has developed have been adopted by other medical scientists.

A 1969 graduate of Yale University, Lemasters earned M.D. and Ph.D. degrees from Johns Hopkins University in 1975. He was appointed to the UNC-CH School of Medicine faculty in 1977 as an assistant professor. Lemasters, who also serves as director of graduate studies in the Department of Anatomy, was promoted to associate professor this year.

The American Heart Association established investigatorship is a five-year award, covering the period July 1, 1982-June 30, 1987.

Dr. Rita Valentino, a postdoctoral research associate in pharmacology, has won an American College of Neuropsychopharmacology-Mead Johnson

Travel Award. The \$1,000 award covered Valentino's travel and expenses associated with the annual meeting of the American College of Neuropsychopharmacology. The meeting was held Dec. 14-18 in San Diego, Calif.

Valentino, who is from Scotch Plains, N.J., is one of 10 recipients of the award. She is working with Dr. Raymond Dingledine, assistant professor of pharmacology, on the effects opiates have on the brain.

Valentino received a B.S. degree in pharmacy from the University of Rhode Island in 1975 and a Ph.D. in pharmacology from the University of Michigan in 1980. She is working at UNC-CH on a National Institute of Drug Abuse Postdoctoral Fellowship Award.

The Department of Family Medicine at the University of North Carolina at Chapel Hill School of Medicine has been awarded a grant to report on how the inpatient care experiences of family medicine residents through the country are documented.

The \$5,583 grant, awarded by the Family Health Foundation of America, will be used to develop a detailed report on the various ways family medicine programs in the United States document the diagnoses and procedures their residents perform while treating inpatients.

"The monograph developed through this grant will be a resource document for family medicine programs throughout the country," said Jacqueline Resnick, a social research assistant and co-author of the project. "Documenting inpatient experiences will help residents obtain hospital privileges and will be important to improving curricula for family medicine programs."

The grant was awarded as the result of a national survey conducted in May by the Department of Family Medicine on behalf of the North Carolina Academy of Family Practice. Under the grant, Dr. Peter Curtis, associate professor of family medicine and director of research, and Resnick will be conducting two follow-up surveys and reporting the results of all three surveys to other family medicine programs.

Included in the monograph will be a commentary on hospital privileges for family practitioners by Dr. Samuel W. Warburton, chief of the division of family medicine and director of the Duke-Watts family medicine program.

R. Hal Shigley, clinical director of the T.E.A.C.C.H. division, presented a paper at the Texas Research Institute of Mental Sciences regional symposium on individualized program planning for autistic citizens Aug. 17-18 in Dallas.

Charles R. Hackenbrock, professor and chairman of the Anatomy Department, spoke at a symposium on membrane dynamics at the VII International Biophysics Congress and III Pan-American Biochemistry Congress Aug. 23-28 in Mexico City.

James W. Lea, director of the Program for International Training in Health, and Dr. Eugene S. Mayer, director of Area Health Education Centers, worked with officials in completing the development and planning of a INTRAH/Government of Turkey program that will design and validate an inservice training system. They met with officials Aug. 28-Sept. 6 in Ankara, Turkey.

Dr. John L. Lemasters, assistant professor of anatomy and cell biology, was a guest speaker at the Gordon Research Conference on Energy Coupling Mechanisms Aug. 17-21 in Hoderness, N.H. Lemasters also gave a seminar at the Pennsylvania State University College of Medicine Aug. 31 in Hershey.

Michael Topal, assistant professor of pathology and a member of the Cancer Research Center, presented a paper at the second European Molecular Biology Organization Meeting on Accuracy in Biological Processes Sept. 3 in Paris.

Dr. Walter E. Stumpf, professor of anatomy and pharmacology, gave lectures and conducted seminars recently at the University of Ulm, West Germany. Stumpf also gave a seminar in Tubingen.

Dr. David G. Kaufman, professor of pathology, biochemistry and nutrition and a member of the Cancer Research Center, participated in a site visit at Boston University School of Medicine Sept. 18.

Eng-Shang Huang, associate professor of medicine, bacteriology and immunology and a member of the Cancer Research Center, participated in a Kaposi Sarcoma Workshop sponsored by the Division of Cancer Treatment and the Division of Cancer Cause and Prevention at the National Cancer Institute and the Center for Disease Control Sept. 15 in Bethesda, Md.

Dr. Joseph S. Pagano, professor of medicine, bacteriology and immunology and director of the Cancer Research Center, presented a talk on Acyclovir Mechanism on Epstein-Barr Replication at the International Acyclovir Symposium Sept. 9 in Washington, D.C.

Three members of the Cancer Research Center who presented posters at the International Acyclovir Symposium in Washington, D.C. on Sept. 9 were: James Shaw, research assistant professor of bacteriology and immunology, Herpes Simplex Virus Resistance to

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DESCRIPTION Forty-five milliliters of SU-TON contains the following ingredients: Pentylenetetrazol, 30 mg • Niacin, 50 mg • Vitamin B-1, 10 mg • Vitamin B-2, 5 mg • Vitamin B-6, 1 mg • Vitamin B-12, 3 mcg • Manganese (as Manganese Sulfate), 1 mg • Magnesium (as Magnesium Sulfate), 2 mg • Zinc (as Zinc Sulfate), 1 mg • Iron (as Ferric Pyrophosphate, Soluble), 22 mg • Alcohol, 18%

INDICATIONS AND USAGE SU-TON contains pentylenetetrazol which may be helpful in the older patient as an analeptic agent when mental confusion and memory defects are present. SU-TON also contains vitamins, trace minerals, and iron, for those patients who may benefit by preventing the development of a deficiency.

CONTRAINDICATIONS Epilepsy, convulsive disorders or known history of sensitivity to any of the listed active ingredients.

WARNINGS The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

PRECAUTIONS Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of SU-TON who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

ADVERSE REACTIONS Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. Usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

DRUG ABUSE Drug dependence has not been reported with SU-TON.

OVERDOSAGE Signs and symptoms of acute overdose may be due principally from overstimulation of the central nervous system and from excessive vasodilatation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage. Intensive care must be provided to maintain adequate circulation and respiratory exchange.

DOSAGE AND ADMINISTRATION One tablespoonful (15 ml) 3 times a day 20-30 minutes before meals. This drug is not for use in children under 12 years of age.

HOW SUPPLIED Bottles of 473 ml (16 fl. oz.)

Federal law prohibits dispensing without prescription.

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Dr. Arthur J. Prange, professor of psychiatry, has been elected for a three-year term to the Council of the American College of Neuropsychopharmacology.

Dr. W. Ray Gammon, assistant professor of dermatology, was a lecturer at the "Westwood Pre-Board Examination" Sept. 10-13 in Chicago.

Dr. Charles H. Hendricks, professor of obstetrics and gynecology, became a fellow ad eudem of the Royal College of Obstetricians and Gynecologists June 3 in London. He was the dedication speaker for the Theobald Seminar Room at University College Hospital June 2. He also gave lectures at University College Hospital, University of Bristol, and University of Newcastle Upon Tyne.

Dr. Edward V. Stabb, professor and associate chairman of radiology, and Dr. Ali Shirkhoda, assistant professor of radiology, displayed an exhibit entitled "Pitfalls in Computed Tomography of the Abdomen and Pelvis" at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago. Shirkhoda also presented a paper co-authored by Dr. Paul Biggers, professor of surgery, entitled "Computed Tomography in Choanalatresia."

Dr. Gustavo S. Montana, professor of surgery, presented a paper entitled "Carcinoma of the Cervix Stage IB, Analysis of Treatment Failures and Complications," at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago. The paper was co-authored by Dr. W. C. Fowler, associate professor of obstetrics and gynecology; Dr. M. A. Varia; Dr. L. A. Walton, associate professor of obstetrics and gynecology; Dr. M. Kirsch; and Dr. McCafferty, assistant professor of radiology. Montana also displayed an exhibit entitled "The Oncology Case of the Day" co-prepared by Dr. Kirsch; Dr. J. Roseman; J. Halle; and Dr. M. A. Varia.

Dr. Carol A. Mittelstaedt, assistant professor of

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ACTIVE MEDICAL STAFF — December, 1981

Rolfe B. Finn, M.D.
William D. Keck, M.D.
Morgan E. Scott, M.D.
Don L. Weston, M.D.
Davis G. Garrett, M.D.
D. Wilfred Abse, M.D.
Hal G. Gillespie, M.D.
Basil E. Roebuck, M.D.
Orren LeRoyce Royal, M.D.



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radiology, was a moderator of an ultrasound works in progress session at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago.

Dr. J. Randolph Perry, assistant professor of radiology, presented a paper entitled "Performance Characteristics of a Digital Gamma Camera" at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago.

Dr. W. Bonner Guilford, assistant professor of radiology, presented an exhibit and paper entitled "Vascular Fracture: New Meaning for Monckeberg's Medial Sclerosis" at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago. The presentation was co-authored by Dr. L. Kwock, assistant professor of radiology; Dr. R. L. Reddick, assistant professor of pathology; Dr. W. D. Mattern, associate professor of medicine; Dr. R. J. Falk; and Dr. L. V. Pacilio.

B. G. Thompson, chief radiological engineer, presented a physics works in progress paper entitled "Performance Evaluation of an Ionization Chamber Phototimer for Portable X-Ray Machines" at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago.

Dr. Gordon F. Murray, professor of cardiothoracic surgery, has been named associate chief of the division, effective immediately. The appointment was announced by Benson R. Wilcox, M.D., Chief, Division of Cardiothoracic Surgery.

East Carolina University School of Medicine

A Charlotte-based architectural firm has been selected to design the School of Medicine's new radiation therapy center, a \$5.3 million project that received final approval from the UNC Board of Governors in November.

The building committee for the ECU board of trustees and medical school representatives selected J. N. Pease Associates as the architect after examining proposed designs for the 12,000-square-foot building.

The facility will be a comprehensive radiation therapy center for Eastern North Carolina and will support existing therapy units in New Bern, Kinston and Goldsboro. The center's staff will work closely with the New Bern unit which offers regional service.

"The radiation therapy center will occupy a very prominent place in our cancer program," said Dr. William E. Laupus, medical school dean. "Its success will contribute to improved and comprehensive care for cancer patients in our region."

The ECU facility will house two medical linear accelerators, a 4-million-volt unit and an 18-million-volt unit, said Laupus. The unit will also include a radiation therapy simulator that provides the high quality radiographic images necessary for planning radiation treatment and determining the appropriate doses. About 40% of the budget will be used for equipment.

The center will be located at the university's health science campus adjacent to the Brody Medical Science Building and Pitt County Memorial Hospital. Construction, scheduled to begin in late 1982, will take 18 to 24 months to complete. Laupus said the medical school expects to open the center in 1984.

Three students received awards this fall at the School of Medicine's annual awards ceremony. Mario Turi, Greenville, Class of 1984, received the Huffman Award for demonstrating the highest level of academic achievement and personal stature in his class. John Dew, Raleigh, Class of 1983, received the Vivian Neal Barnes Memorial Award for achievement in pharmacology. Lee Pippin, Kinston, Class of 1983, received the CIBA Award for outstanding community service.

More than 100 infants and toddlers attended the second annual neonatal intensive care unit graduate party on December 6. Nearly 1,100 critically ill babies have been patients in the NICU since it opened in 1978.

The unit, located at Pitt County Memorial Hospital, is operated by the Department of Pediatrics and supported with funds from the statewide perinatal program.

Dr. Sudhakar Madakasira, assistant professor of psychiatric medicine, has published an article entitled "Capgras Syndrome in a Patient with Myxedema." The article appears in the November issue of the *American Journal of Psychiatry*.

Dr. Thomas F. O'Brien, professor of medicine, recently was named president-elect of the Pitt County Medical Society. O'Brien also has been appointed chairman of the Audit Committee of the N.C. Medical Society.

Dr. James G. Jones, professor and chairman of the Department of Family Medicine, authored a chapter appearing in the book *Principles of Family Practice* published by Springer Verlag, N.Y. The chapter is entitled "Patient Management Skills."

Jones also has been appointed to serve on the American Academy of Family Physicians' Committee on Aging.

Dr. Loretta Kopelman, associate professor of pediatrics and humanities, has been selected to serve a three-year term on the Committee of Philosophy and Medicine of the American Philosophical Association.

Dr. Phillip H. Pekala, assistant professor of biochemistry, recently was invited to lecture at Rockefeller University by Dr. Anathony Cerami, director of Rockefeller's Laboratory of Medical Biochemistry. Pekala presented "Growth and Differentiation of 3T3-L1 Preadipocytes." He also established conditions for growth of the 3T3-L1 cells in the Rockefeller laboratory.

Pekala also traveled to Anaheim for the 21st annual meeting of the American Society for Cell Biology. At the meeting, he presented a paper entitled "Independent Effects of Differentiating Conditions and Time in Culture on Hormone Responsiveness and Guanine Nucleotide Regulatory Proteins of 3T3-L1 Preadipocytes and 3T3-C2 Fibroblasts."

Pekala was selected as chairman for the society's session on "Hormones and Receptors 1: Protein Phosphorylation and Hormonal Regulation."

Three faculty members presented a paper at the regional meeting of the American Society for Microbiology held in Williamsburg December 4-6.

Dr. Robert S. Fulghum, associate professor of microbiology, Dr. Jack E. Brinn Jr., associate professor of anatomy, and John M. Worthington, research technician, presented "Induced Otitis Media in Chinchillas and Gerbils Using *Streptococcus pneumoniae*, *Haemophilus influenzae* and a Polymicrobial Culture with Anaerobic Bacteria" during the meeting.

Several School of Medicine faculty have received research grants recently.

Dr. Alvin Volkman, professor of pathology and laboratory medicine, has received \$74,650 to study "Mechanisms of Macrophage Diversity" from the National Institutes of Health.

Dr. Judith M. Thomas, associate professor of surgical research, was granted \$87,157 from the Department of Health and Human Services to study "Action of Rabbit Anti-human Thymocyte Globulin."

The Department of Health and Human Services also granted \$60,490 to Dr. S. Jamal Mustafa, as-

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sociate professor of pharmacology, for the study of "Mechanisms of Coronary Flow Regulation by Adenosine."

Dr. Ronald W. Dudek, assistant professor of anatomy, was awarded \$31,751 by the Juvenile Diabetes Foundation. Dudek's research examines the "Ultrastructural Study on Maturation of Insulin Secretion."

AMERICAN COLLEGE OF PHYSICIANS

Eight North Carolinians have been chosen Fellows of the American College of Physicians. They are Drs. Myron S. Cohen, Romulo E. Colindres and David S. Sheps of Chapel Hill, Drs. Jack D. McCue and David R. Patterson of Greensboro, Dr. William F. Bobzien III of Rocky Mount, Dr. John A. Boice of Wilmington, and Dr. James A. Whitaker III of Wilson.

The removal of the inflammation is as indissolubly connected with venesection as its cause, as the extinction of the spark when it falls upon snow, or with an explosion when it falls upon gunpowder with these substances respectively, and its operation is with equal difficulty explained: for the mind, in contemplating the abstraction of blood from the vessels, sees nothing more than the simple phenomenon and its effects, the debility and the removal of the disease, its consequent. Why the abstraction of the blood, should produce a diminished action of the heart, is equally inexplicable with the power of snow to extinguish th spark, or of gunpowder to produce an explosion, on the contact of that body. Reasoning from analogy, we should expect that the diminution of the quantity of blood in the vascular system, would lessen the mass to be propelled, and enable the heart to act with more vigour; but the contrary is the case; debility takes place long before a sufficient quantity is abstracted to lessen the mass of the blood, so as to aid its propulsion by diminishing its volume and weight. The phenomenon is purely vital; we see that it is followed by its effect, the removal of the disease, and this is all we know upon the subject. This naked manner of contemplating the operation of the causes, which affect the human body, produces great certainty, as it is continually the subject of observation, and experience will rectify its errors. A cause, then, is merely a phenomenon, which is invariably antecedent and connected with another, as its consequent; and this connection is expressed by the word power, which is given to the antecedent phenomenon, from its invariable order of occurrence. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

In Memoriam

DAVID EARL SMITH

David Earl Smith was born on January 26, 1938, in Bluefield, West Virginia. He received his Bachelor of Science and medical degrees at West Virginia University and completed an internship at Lankenau Hospital in Philadelphia. After two years of active duty in the U.S. Navy, he went to New York City to pursue residency training in ophthalmology at the New York Eye and Ear Infirmary. In 1969 he joined the Charlotte Eye, Ear and Throat Associates, where he was serving as President of the Medical Staff of the Charlotte Eye, Ear, and Throat Hospital at the time of his death, July 18, 1981.

He died in a drowning accident in a rain swollen mountain river near Cherokee while vacationing with his family. He is survived by his wife, Carolyn, and sons, Danny, Timmy and Steve.

Dave was a special friend to many people. He was a dedicated Christian of deep convictions who, with the love and support of his wife and his boys, tried to live each day of his life as a witness to his belief in the Lord. He had an abiding faith in the basic goodness of people.

Dave had an intuitive sense of human needs of his patients, took the time to listen to his patients, and tried to minister to their emotional and spiritual needs in the best way that he could. He was an effective listener and counselor.

Dave's Christian activity centered chiefly around Calvary Church, a very active evangelical church with a strong missionary program. He was Clerk of Session, the most highly respected position for an elder and one which calls for extraordinary communications skills, sound judgment and sensitivity. In addition, he spent several years as Chairman of the Missions and Evangelism Committee and served on the Finance and Christian Education Committees as well. He served on the home board of Wycliffe Bible Translators and was intimately associated with their support group in Waxhaw, the Jungle Aviation and Radio Service.

As President of the Charlotte Eye, Ear, and Throat Hospital Medical Staff, Dave was an effective leader. As a skilled ophthalmologist and eye surgeon, he strove to remain current in new techniques.

Dave managed to live each day to the fullest and put a tremendous amount of productive activity into his allotted forty-three years. Although Dave was understandably proud of his professional attainments, he would be most pleased to be remembered for his efforts on behalf of Christian evangelism.

Julian C. Culton, M.D.

Mecklenburg County Medical Society

TIFFANY NOLAN BARNES, M.D.

Dr. Tiffany Nolan Barnes died October 20, 1981. He was born October 10, 1930, in Asheboro, the son of Dr. Tiffany Barnes and Doris Nolan. He attended Wake Forest University where he received his B.S. degree in 1952. In 1957 he completed his medical training at the Medical College of Virginia. He completed his internship at DePaul Hospital, Norfolk, and his residency at Petersburg, Va., Sanatorium in 1959.

Dr. Barnes served on active duty with the U.S. Navy from 1959 to 1961. From active duty he returned to Asheboro to pursue his family practice. During this time he was a member of the medical staff of the Randolph Hospital, the North Carolina Medical Society, the American Medical Association and the American Academy of Family Practice.

Dr. Barnes exhibited a love and concern for his patients and was dedicated to his profession and the cause of good medical care.

He and his wife, the former Dorothy Bennett, had three children, Tiffany, Doris Lake and Angela.

RANDOLPH COUNTY MEDICAL SOCIETY

THORNTON RITENOUR CLEEK, M.D.

Dr. Thornton Ritenour Cleek died September 20, 1981. He was born June 24, 1919, in Warm Springs, Va., to George Washington Cleek and Seraphine Ritenour. He attended Washington and Lee University where he received his B.A. In 1950 he completed medical training at the Medical College of Virginia, and completed his internship and residency at Brooks General Hospital, Fort Sam Houston, Texas. After his residency he served two years in the Army Medical Corps and retired from the Army Reserve as a captain.

Thornton served organized medicine in numerous capacities. He was a member of the staff of Randolph Hospital, the Randolph County Medical Society, the North Carolina Medical Society, the North Carolina Academy of Family Practice, the American Academy of Family Practice and the American Medical Association. He served the North Carolina Medical Society as Counselor for the Eighth District from 1971 to 1973. He was a member of the Peer Review Commission and director of the Peer Review Foundation, the Medical-Legal Commission and the Headquarters Commission of the medical society. He was also a member of the Commission of Health Services of the North Carolina Division of Human Resources. In the North Carolina Academy of Family Practice he served as a director from 1961 to 1963, as vice-president in 1965, secretary-treasurer 1966 to 1969, and president in 1971. In the American Academy of Family Practice he

served on the Finance Committee as an alternate delegate from North Carolina 1977-1981, and a Charter Fellow of the American Board of Family Practice.

In his community he was a member of the First Presbyterian Church and served as deacon. He was active in scouting and was a member of the board of trustees of the Medical Alumni Association of the Medical College of Virginia and a member of the Sons of the American Revolution.

Thornton exhibited not only a love for his profession but a sense of responsibility and dedication to his patients. He was kind, thoughtful and understanding and made himself available always as a primary care physician. His friends and colleagues will long remember him as being sincere and dedicated to the principles of accuracy and understanding.

RANDOLPH COUNTY MEDICAL SOCIETY

In Paris, there has arisen a new fancy, which fixes this imaginary being, intervening between the primary cause and the disease, in the intestines and stomach. Instead of the spasm of Cullen seated in the skin, and the excitability of Brown dispersed over the whole system, Broussais imagines the disease to consist of an inflamed state of the intestinal canal. As few persons die in the first attack of fever, it is difficult to prove the existence of this inflamed state of the lining membrane of this passage; and besides, appearances of inflammation occur without any other cause than the simple powers of the arteries, and therefore any proof drawn from this source must be equivocal. Yelloly found that persons who had died from hanging, exhibited the mucous membrane of the intestines in a high state of apparent inflammation. Dr. Seeds and Dr. Parrish, state that animals bled to death, exhibited the same appearances. As it has been found, too, in cases of death from other causes, it is certain that when discovered after fever, particularly a long time after the first cause has ceased to operate, it cannot be considered in any other light, than as an hypothesis. Dr. W. Phillips proved that the lungs and the stomach, were covered with injected vessels, in animals who died from dividing the par vagum. Mr. Brodie has shown, that arsenic applied to wounds, kills animals, and the stomach is found apparently inflamed, though no poison has been applied to it. These facts then show, that an inflamed state of the capillaries occurs from other causes, and in other situations; and that it can by no means be regarded as the result of the operation of miasmata, though it is found among the morbid phenomena, which are discovered after death. It might with more propriety be considered as a result, than as a cause of that class of diseases; though even this is problematical, since it is discovered in subjects who have died suddenly from a state of the most perfect health. It is therefore only a concomitant of these affections, and must, when regarded as their cause, be considered as entirely hypothetical. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

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Official Journal of the NORTH CAROLINA MEDICAL SOCIETY

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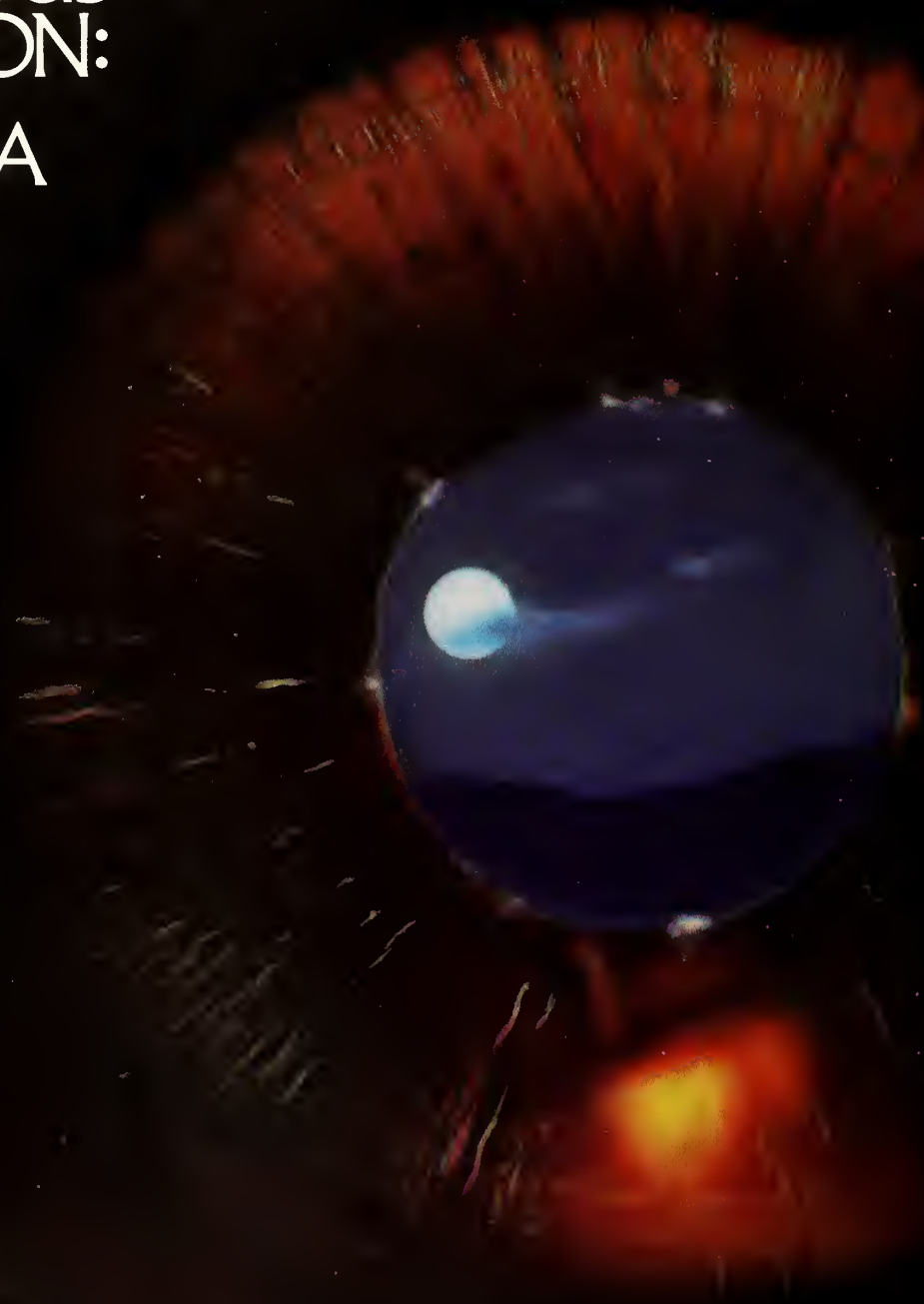
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Limbitrol brings a special—and specific—quality of relief to most anxious depressed patients. Insomnia, for example, responds with particular promptness. Other symptoms likely to respond within the first week of treatment include anorexia, agitation and psychic and somatic anxiety. And, as the depression and anxiety are alleviated, in many cases so are such related somatic symptoms as headache, palpitations, and various vague aches and pains.

Limbitrol given once daily h.s. may be the best approach

Many patients respond readily to a single bedtime dose of Limbitrol, a convenient schedule that may enhance compliance and helps relieve the insomnia associated with anxious depression. Limbitrol also offers a choice of other regimens: t.i.d., or a divided dose with the larger portion h.s. In all cases, caution patients about the combined effects with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as driving or operating machinery.

in moderate depression and anxiety

Limbitrol® IV

Tablets 5-12.5 each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline
(as the hydrochloride salt)

Tablets 10-25 each containing 10 mg chlordiazepoxide and 25 mg amitriptyline
(as the hydrochloride salt)

Specific therapy with h.s. dosage convenience

Please see summary of complete product information on following page.

LIMBITROL® TABLETS Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses). Myocardial infarction and stroke reported with use of this class of drugs. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies.

Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage; withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated. Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs.

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10, Prescription Paks of 50.

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Pinehurst, N.C.

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SYMPOSIUM**
July 2-4, 1982
Blockade Runner
Wrightsville Beach, N.C.

COMMITTEE CONCLAVE
September 29-October 3, 1982
Mid Pines Club
Southern Pines, N.C.



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MEDICAL JOURNAL

April 1982, Vol. 43, No. 4

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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Deadline for applications is 1 September 1982. All applicants are encouraged to also participate in the NIRMP. Selections for the Army FYGME Program will be announced in sufficient time for selectees to withdraw from the NIRMP.

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Rosenthal, P., and Liebman, W.M: Comparative study of stool examinations, duodenal aspiration, and pediatric Entero-Test for giardiasis in children. *J. PEDIAT.* 96: 278 (Feb.) 1980.

Thomas, G. E., et al: Use of the Entero-Test duodenal capsule in the diagnosis of giardiasis. *South Afr. Med J.* 48: 2219, 1974.

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Treatment failure was judged to have occurred when lesions increased in size and/or number during the initial week of treatment with penicillin V-K. No treatment failures occurred with Tegopen.

*Data on file, Bristol Laboratories.

Brief Summary of Prescribing Information

TEGOPEN®
(cloxacillin sodium)
Capsules and Oral Solution

For complete information, consult Official Package Circular.

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INDICATIONS:

Although the principal indication for cloxacillin sodium is in the treatment of infections due to penicillinase-producing staphylococci, it may be used to initiate therapy in such patients in whom a staphylococcal infection is suspected. (See Important Note below.)

Bacteriologic studies to determine the causative organisms and their sensitivity to cloxacillin sodium should be performed.

IMPORTANT NOTE

When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

CONTRAINDICATIONS:

A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication.

RESULTS OF ORAL THERAPY revealed a high percentage of treatment failures with penicillin V potassium, but *no* failures with Tegopen.

		Given Tegopen® (cloxacillin sodium)	Given penicillin V-K
<i>Staphylococcus aureus</i>	(78 patients)	39	39
Returned to clinic at one week.....	29†	38†	
Treatment failure at one week	0	18 (47.4%)	
<i>Staphylococcus aureus</i> and <i>Streptococcus pyogenes</i>	(9 patients)	4	5
Returned to clinic at one week	4	5	
Treatment failure at one week	0	2 (40%)	
No initial bacterial growth	(14 patients)	9	5
All 14 healed, regardless of which antibiotic was administered.			
<i>Beta-hemolytic Streptococcus</i>	(1 patient)	0	1
TOTALS:	102 patients	52 patients	50 patients

†Eleven patients did not return for their one-week checkup. These were all called by telephone, and their families reported

the lesions had healed. One patient was dropped from the study, early, because of adverse reaction to medication.

STUDY: DESCRIPTION/PROTOCOL

- 102 nonselected subjects, with initial bacteriology as follows: 77% *Staphylococcus aureus*, 9% mixed *Staphylococcus aureus* and *Streptococcus pyogenes*, and 1% beta-hemolytic *Streptococcus*.†
- All patients were given randomized therapy—Tegopen capsules or oral solution, or penicillin V-K tablets or oral solution, in recommended dosages according to body weight.

- All patients were evaluated after one week's therapy. If there was no improvement, therapy was switched to the other antibiotic. The "other antibiotic" proved to be Tegopen 100% of the time because no treatment failures had occurred with Tegopen.
- A final assessment of progress was made two weeks after initiation of Tegopen therapy.

†The remainder, to equal 100%, consisted of 14 patients (13%) who exhibited no initial bacterial growth. These 14 were all healed, whether given Tegopen or penicillin V-K.

TEGOPEN®

(cloxacillin sodium)

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WARNING:

Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. Although anaphylaxis is more frequent following parenteral therapy it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens.

There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

PRECAUTIONS:

The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

ADVERSE REACTIONS:

Gastrointestinal disturbances, such as nausea, epigastric discomfort, flatulence, and loose

stools, have been noted by some patients. Mildly elevated SGOT levels (less than 100 units) have been reported in a few patients for whom pretherapeutic determinations were not made. Skin rashes and allergic symptoms, including wheezing and sneezing, have occasionally been encountered. Eosinophilia, with or without overt allergic manifestations, has been noted in some patients during therapy.

USUAL DOSAGE:

Adults: 250 mg. q.6h.

Children: 50 mg./Kg./day in equally divided doses q.6h. Children weighing more than 20 Kg. should be given the adult dose. Administer on empty stomach for maximum absorption.

N.B.: INFECTIONS CAUSED BY GROUP A BETA-HEMOLYTIC STREPTOCOCCI SHOULD BE TREATED FOR AT LEAST 10 DAYS TO HELP PREVENT THE OCCURRENCE OF ACUTE RHEUMATIC FEVER OR ACUTE GLOMERULONEPHRITIS.

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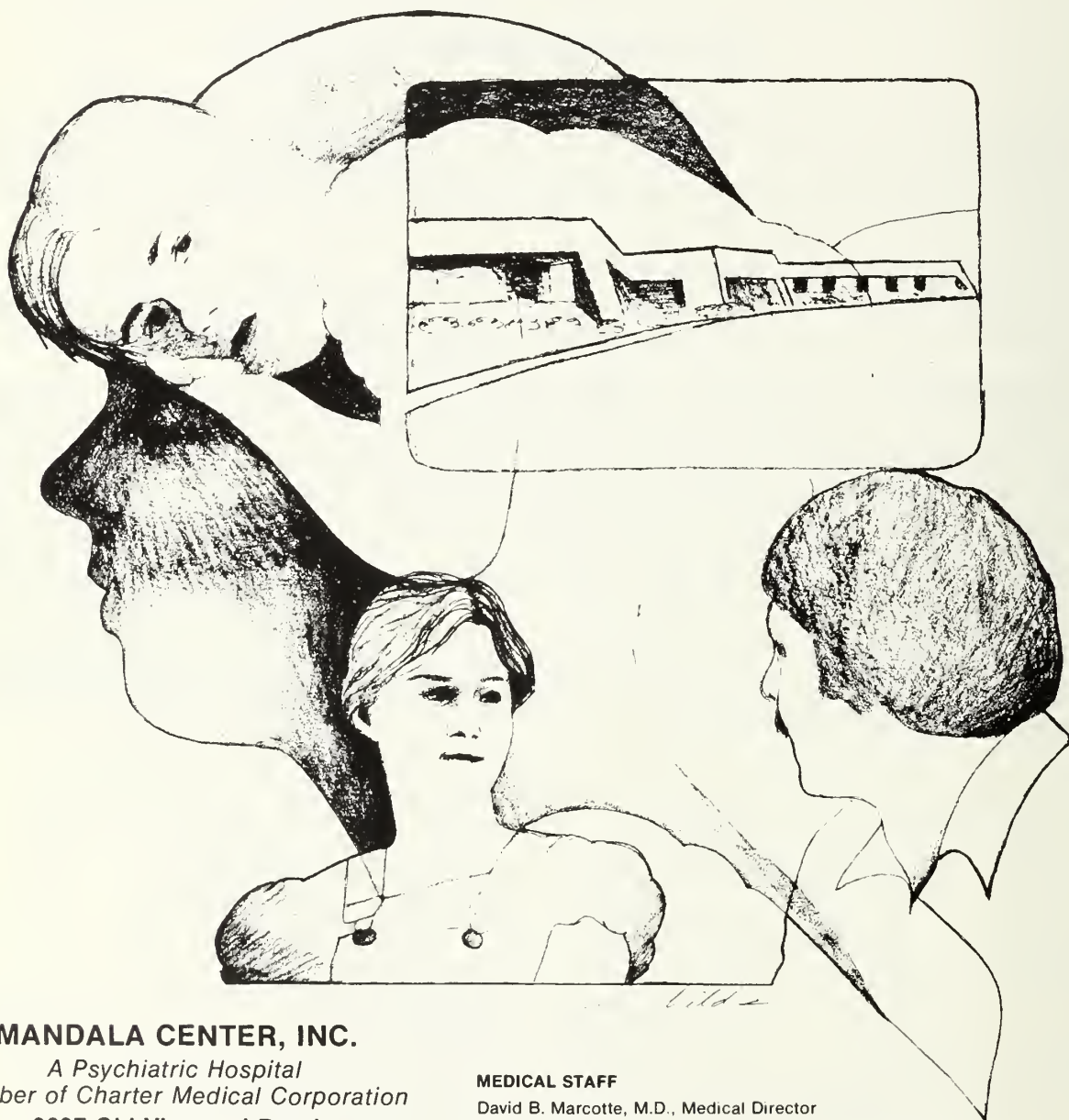
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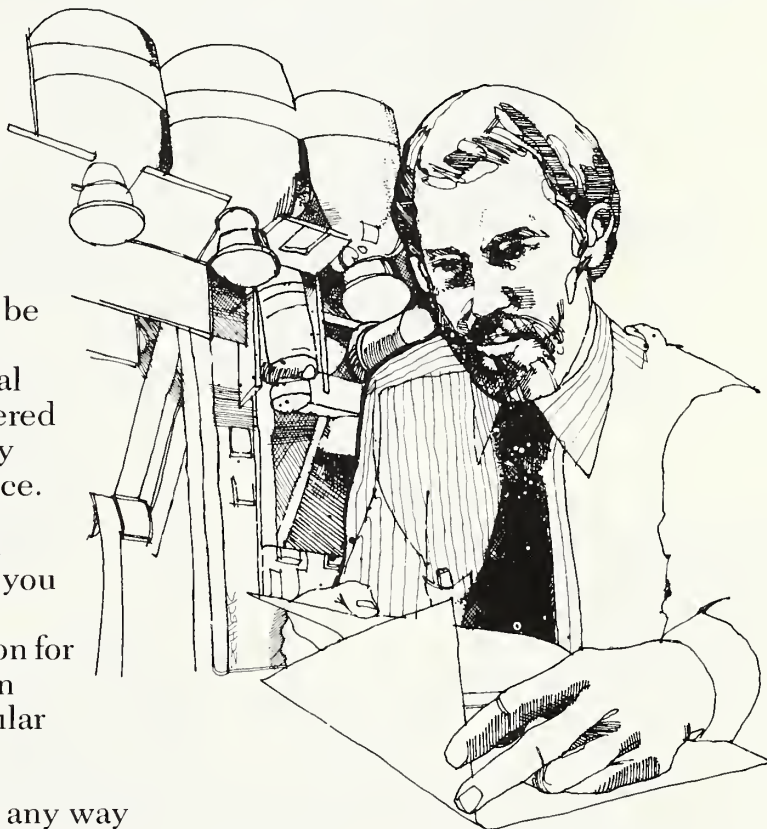
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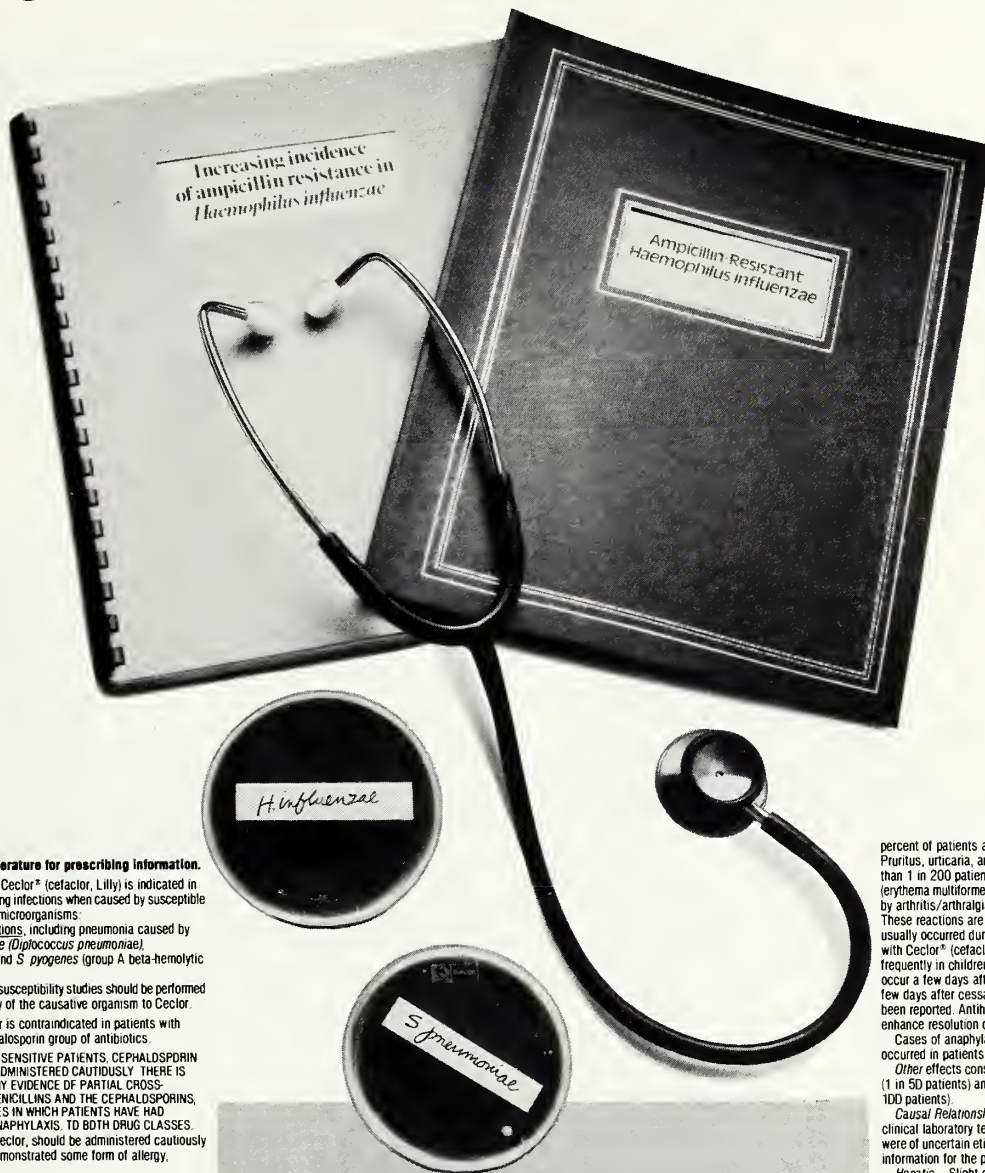
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An added complication... in the treatment of bacterial bronchitis*



Indications and Usage: Cefaclor* (cefactor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefaclor.

Contraindication: Cefaclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: In penicillin-sensitive patients, cephalosporin antibiotics should be administered cautiously. There is clinical and laboratory evidence of partial cross-reactivity of the penicillins and the cephalosporins. There are instances in which patients have had allergic reactions, including anaphylaxis, to both drug classes. Antibiotics, including Cefaclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of susceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when titrations are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefaclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made. Cause of safe dosage may be lower than that usually recommended. As a result of administration of Cefaclor, a false-positive reaction to glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistix® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, SP, Lilly).

Usage in Pregnancy: Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy: Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefaclor therapy are uncommon and are listed below:

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare cases of pseudomembranous colitis, has been reported in conjunction with therapy with Cefaclor.

Hypersensitivity reactions have been reported in about 1.5

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cefaclor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefaclor.⁷

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percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefaclor* (cefactor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain: Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic: Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic: Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal: Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). (100281R)

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefaclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

References

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2. Antimicrob. Agents Chemother., 11:470, 1977.
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7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G.L. Mandell, R.G. Douglas, Jr., and J.E. Bennett), p. 487. New York: John Wiley & Sons, 1979.



Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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alcoholics. Ethanol may produce many effects that together bring about nutritional deficiencies, so that alcoholism affects nutrition at many levels.¹

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patients. Nutritional status can be compromised by the trauma of surgery; and some operations interfere with the ingestion, digestion and absorption of food.³



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Indications: Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions, including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals; certain conditions resulting from severe B-vitamin or ascorbic acid deficiency; or conditions resulting in increased needs for essential vitamins and minerals.

Contraindications: Hypersensitivity to any component.

Warnings: Not for pernicious anemia or other megaloblastic anemias where vitamin B₁₂ is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B₁₂ deficiency who receive supplemental folic acid and who are inade-

quately treated with B₁₂.

Precautions: General: Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. **Information for the Patient:** Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. **Drug and Treatment Interactions:** As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

Adverse Reactions: Adverse reactions have been reported with specific vitamins and

000,000 hospital patients with infections.⁴ Many are anorectic and may have a markedly reduced food intake. Supplements are often provided as a prudent measure because the vitamin status of critically ill patients cannot be readily determined.³

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References: 1. Shaw S, Lieber CS: Nutrition and alcoholism, chap. 40, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME. Philadelphia, Lea & Febiger, 1980, pp. 1220, 1237. 2. Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, op. cit., p. 781. 3. Shils ME, Randall HT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, op. cit., pp. 1084, 1089, 1114. 4. Dixon RE: *Ann Intern Med* 89 (Part 2): 749-753, Nov 1978. 5. Committee on Dietary Allowances, National Research Council: Recommended Dietary Allowances, ed 9. Washington, National Academy of Sciences, 1980, p. 13.

erals, but generally at levels substantially higher than those in Berocca Plus. However, allergic and idiosyncratic reactions are possible at lower levels. Iron, at the usual recommended levels, has been associated with gastrointestinal intolerance in some patients.

Dosage and Administration: Usual adult dose, one tablet daily. Not recommended for children. Available on prescription only.

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*Reference: 1981/82 American Druggist Blue Book

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SU-TON[®]

Liquid Tonic

A Tonic for Geriatric Patients

A pleasant tasting tonic containing iron, vitamins, minerals, and an analeptic. Ideal for those who may benefit from vitamin deficiency prevention. Just one tablespoon before each meal.

DESCRIPTION Forty-five milliliters of SU-TON contains the following ingredients. Pentylenetetrazol, 30 mg • Niacin, 50 mg • Vitamin B-1, 10 mg • Vitamin B-2, 5 mg • Vitamin B-6, 1 mg • Vitamin B-12, 3 mcg • Manganese (as Manganese Sulfate), 1 mg • Magnesium (as Magnesium Sulfate), 2 mg • Zinc (as Zinc Sulfate), 1 mg • Iron (as Ferric Pyrophosphate, Soluble), 22 mg • Alcohol, 18%

INDICATIONS AND USAGE SU-TON contains pentylenetetrazol which may be helpful in the older patient as an analeptic agent when mental confusion and memory defects are present. SU-TON also contains vitamins, trace minerals, and iron, for those patients who may benefit by preventing the development of a deficiency.

CONTRAINDICATIONS Epilepsy, convulsive disorders or known history of sensitivity to any of the listed active ingredients.

WARNINGS The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

PRECAUTIONS Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of SU-TON who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

ADVERSE REACTIONS Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

DRUG ABUSE Drug dependence has not been reported with SU-TON.

OVERDOSSAGE Signs and symptoms of acute overdose may be due principally from overstimulation of the central nervous system and from excessive vasodilatation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage. Intensive care must be provided to maintain adequate circulation and respiratory exchange.

DOSAGE AND ADMINISTRATION One tablespoonful (15 ml) 3 times a day 20-30 minutes before meals. This drug is not for use in children under 12 years of age.

HOW SUPPLIED Bottles of 473 ml (16 fl. oz.)

Federal law prohibits dispensing without prescription.

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February 1982



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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

No. 11

APRIL 1982

Dear Colleagues:

The Pre-Proposal Conference for "Potential Offerers" was attended by representatives of twenty-one (21) large corporations, on March 2, 1982. Attendance at this Conference makes it possible for each of these corporations to submit a proposal in bid for the contract to administer the State Employees' Health Plan. Some who attended may choose not to submit a proposal, but proposals will not be accepted from anyone who did not attend the Conference. All proposals must be submitted on April 8, and the successful bidder will be announced on May 10. In the last NEWSLETTER, I discussed some of the criteria for the Plan. Some of our members wrote to request additional information and, thus far, all concerned the "second surgical opinion" requirement.

Councilor Robert H. Shackelford, also Speaker of the Congress of Delegates of the American Academy of Family Practice, wrote: "It would appear to me that any patient's primary physician would be in a much better position to render second opinion on cholecystectomy, total hysterectomy, tonsillectomy, and adenoidectomy than another surgically trained individual." I share the concern of each of you. The North Carolina Medical Society representatives, who met with the appropriate Legislative Committee, addressed the "second surgical opinion," but we met with no success and the provision remained unchanged. However, the potential offerers were allowed to submit written questions which were answered by the State's Contract Office, as follows:

- Q. "What are the requirements for contracting with physicians for the second opinion program? What current arrangements does BCBS have?"
A. "New administrator will set up own procedure."
- Q. "Can a patient only get second surgical opinions from surgeons whose names are provided by the Plan Administrator?"
A. "Yes."
- Q. "Can the patient pick his/her own surgeon for the second opinion?"
A. "No."
- Q. "Is the intent to pay 80% of 90% of Plan benefits in the absence of a second surgical opinion to apply this reduction only to physician charges and room and board to the exclusion of ancillary charges?"
A. "Yes."
- Q. Most effective second opinion programs do not limit second opinions to surgeons since medical conditions may indicate that the patient's condition for which the surgery is being considered may be better treated conservatively without surgery. Is it recommended that the second opinion benefits be extended to 'medical specialists'?"
A. "Yes, if Board Certified" (Note: This is contradictory to statements in the criteria of the "Request for Proposal".)

It is always good to receive answers to the NEWSLETTER, if only to know that it is being read. The Council was advised that we would probably receive no more than

an 18% response to the Questionnaire distributed to our members. I am delighted to tell you that we have been overwhelmed by your response! Thus far, with another week to go, 42% of the 6,100 Questionnaires have been completed and returned. After careful evaluation by an "Overview Committee" of physician members, your opinions will be reported to the Executive Council on April 3 and to the House of Delegates for action at the Annual Meeting. I am deeply grateful for your interest and response. One exhausted "wag" on the committee remarked, "Jo, you may not have done anything else this year, but you surely stirred them up." I plead guilty to wanting every one of our members to be "stirred up" so that this Society can be 100% effective in its undertakings!

All resolutions to be deliberated by the House of Delegates have been received. Seven (7) County Societies have submitted resolutions concerning drunken drivers as a public health menace. Other resolutions concern requirements and qualifications of local health directors, "no code blue" legislation, community mental health programs, the living will, AMA recruitment, repeal of the PSRO legislation, method of election of North Carolina Medical Society Officers, campaign expenses of North Carolina Medical Society candidates for AMA office, the North Carolina Medical Journal, medical malpractice legislation, and medical student loans. Various reports to be deliberated concern physician assistants, psychiatric care of prisoners, a statewide Medicaid fee schedule, and an increase in North Carolina Medical Society dues. Each of these issues will be discussed in Reference Committees on Thursday, May 6, at 2:00 p.m. in the Pinehurst Hotel. Every member of the Society can attend and enter into all discussions. This is the membership's forum where policy is promulgated. Come, participate, and be heard! Show the House of Delegates that you are concerned with these issues which will greatly affect your practice and your future life!

Governor Hunt has appointed Fred G. Patterson, M.D., to the Governor's Task Force on Drunken Drivers. For many years, Fred has worked with the NCMS Traffic Safety Committee and the Highway Safety Branch of the Division of Health Services. Since he will represent the Society on the Task Force, he is anxious to hear your thoughts on a solution to the problem of drunken drivers. He asks that you write him at 1001 S. Hamilton Rd., Chapel Hill, N.C. 27514.

I was privileged to attend the first presentation of MALPRACTICE AWARENESS STAT. Several months ago, I wrote you that Ira Hardy's ad hoc Committee on Risk Management was working with Medical Mutual Insurance Company and St. Paul to present a three-hour program on Risk Management. The first presentation by Medical Mutual, on March 13, was oversubscribed and, necessarily, limited to Wake County physicians. It was so good that I did not see a single eye shut or head nod when the lights were dimmed for slides. Within one week, each of us received official credit for 3 hours (Category 1) CME and "5% individual premium discount for each of the next three (3) years (effective with policies renewed more than sixty (60) days following the presentation)". This commitment is from Medical Mutual only, but I feel sure that St. Paul will move quickly to compete. A second presentation will come on Wednesday, May 5, at the Pinehurst Hotel, just prior to the Annual Meeting. Ira Hardy, the ad hoc Committee on Risk Management, and Wayne Parker (of Medical Mutual) deserve our gratitude and a tremendous ovation from each of us!

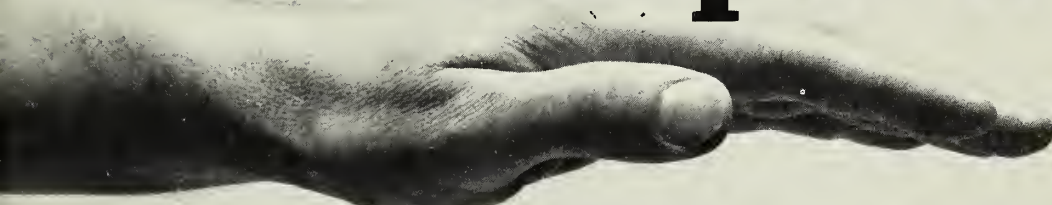
On that happy note, I wish for you and your family a happy and wonderful Easter season!

My best to you and your family,



Josephine E. Newell, M.D.

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Ultrasound and a Neural Tube Screening Program in North Carolina

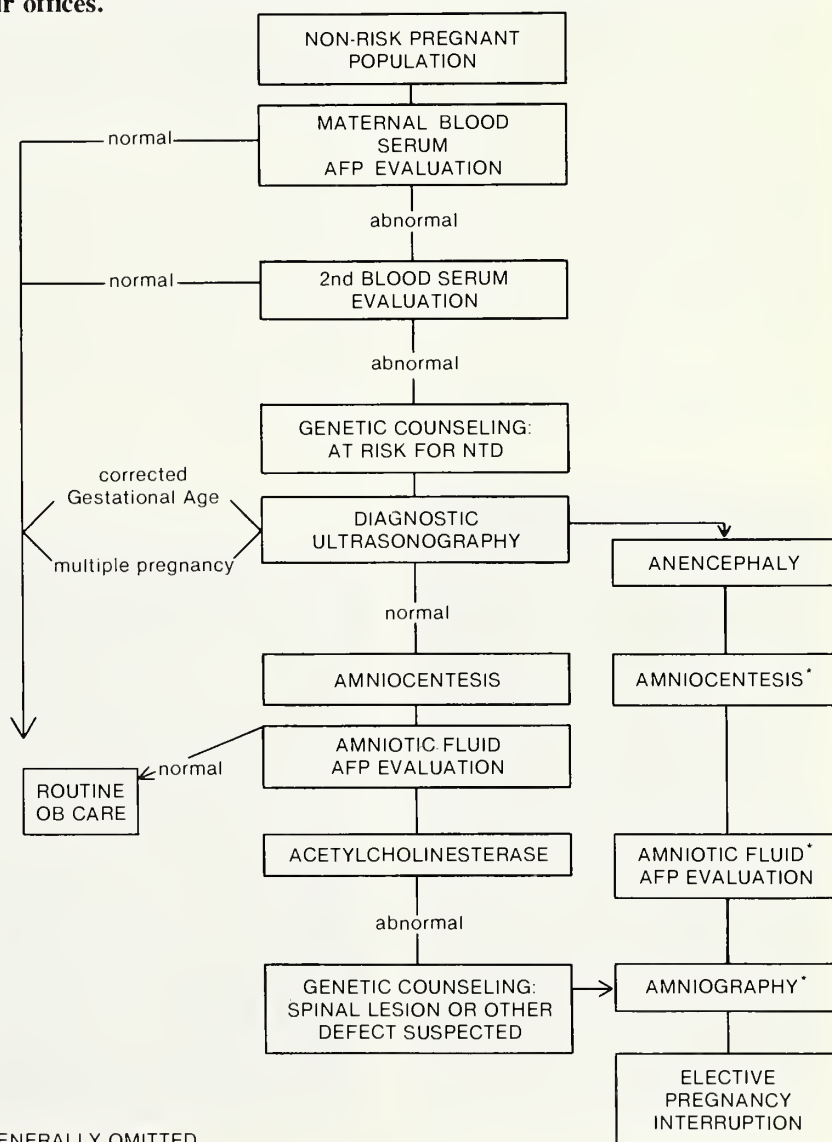
Lewis H. Nelson, M.D., Stephen G. Anderson, M.D.,
Sherrin G. Sowers, M.A., and Barbara K. Burton, M.D.

ABSTRACT In the United States, the risk of a neural tube defect (NTD) is approximately two per thousand births¹ with 90% of these infants born to families with no history of the disorder. A pilot study for the prenatal detection of neural tube defects has been conducted in Forsyth County, North Carolina. During 1979-1980, 1,944 patients were screened by maternal serum alpha fetoprotein (MSAFP) and the next year 2,339 patients were screened representing an increase from 42% to 54.6% of total births. Ultrasound examinations were performed on 116 of the 4,283 patients (2.7%). Approximately one-third of those scanned had either an incorrectly dated last menstrual period, multiple gestation, or fetal death in utero. Although evaluation of pregnancies for birth defects requires considerable skill and complex equipment, at least 30% of the initial diagnoses made by ultrasound evaluation can be made by physicians in their offices.

IN the United States, the risk of a neural tube defect (NTD) is approximately two per thousand births¹ with 90% of these infants born to families with no known history of a previous disorder. A pilot study for the prenatal detection of neural tube defects has been conducted in Forsyth County, North Carolina. Others²⁻⁷ have described their experiences in the United Kingdom and the United States with prenatal NTD detection by measuring the concentration of maternal serum alpha fetoprotein (MSAFP). Ultrasonography is an important step in the evaluation of patients with elevated MSAFP. We present here our experience with ultrasound as it relates to screening in North Carolina.

MATERIALS AND METHODS

The protocol for screening is shown in Figure 1. We defined elevated MSAFP as 2.5 times the median value and low MSAFP as approximately 0.3 times the median. These definitions are similar to the above studies.²⁻⁷ All patients undergoing ultrasound examination were initially scanned using a real time linear array scanner with double focused 3.5 mHz or 5.0 mHz trans-



* GENERALLY OMITTED

Figure 1: Flow chart for the pilot project. Amniography is generally omitted in firm diagnosis.

From the Department of Obstetrics and Gynecology and Pediatrics, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103
Reprint requests to Dr. Nelson, Department of Obstetrics and Gynecology

ducers.* Amniography is performed for diagnosis unless the diagnosis is certain on scanning.

RESULTS

During 1979-1980, 1,944 patients or 42% of the total births were screened. This increased to 2,339 patients or 54.6% of recorded births in the next year (Table I). Ultrasound examinations were performed on 116 patients because of elevated or low MSAFP and, in some instances, maternal anxiety following only one elevated MSAFP (Table II). Of the patients who underwent ultrasound examination, 34.4% had either an incorrectly dated last menstrual period, multiple gestation, or fetal death in utero. Nineteen patients with elevated MSAFP declined any further study after their initial ultrasound examination and presumably delivered normal infants. Seven abnormalities were indicated by elevated serum AFP and six were detected at ultrasound examination. Following amniocentesis and amniography, the six diagnosed were an open neural tube with concomitant abnormalities in four patients, severe oligohydramnios in one, and multiple congenital anomalies in one (Figures 2-6). The multiple congenital anomalies were considered secondary to entrapment of fetal structure by amniotic bands because of the constrictions found around the fetal extremities (Figure 7). The case missed on ultrasound is discussed below.

*Advanced Diagnostic Research, Tempe, Arizona.

TABLE I

Forsyth County NTD Screening Program

	1979-80		1980-81		Total	Percent
	No.	Percent	No.	Percent		
Screened	1944	100.0	2339	100.0	4273	100.0
1st elevated MSAFP	89	4.6	93	4.0	182	4.2
2nd elevated MSAFP	51	2.6	47	2.0	98	2.3
Ultrasound	64	3.3	52	2.2	116	2.7
Amniocentesis	29	1.49	25	1.1	54	1.3

TABLE II

Summary of Ultrasound Examinations — Elevated MSAFP

	1979-1980		1980-1981		Total	Percent
	No.	Percent of Patients Scanned	No.	Percent of Patients Scanned		
Scanned	64	100.0	52	100.0	116	100.0
Dates in error	8	12.5	10	19.2	18	15.5
Multiple gestation	7	10.9	8	15.4	15	12.9
Fetal death	5	7.8	2	3.8	7	6.0
Abnormality detected	5	7.8	1	1.9	6	5.2
Declined further study	13	20.3	6	11.5	19	16.4
Proceeded to amniocentesis	29	43.8	25	48.1	54	46.6

Of the 80 patients with low serum

AFP, 62 (77.5%) had incorrect dates, a fetal demise, were not pregnant, or had a molar pregnancy (Table III). The remainder had correct dates or were lost to follow-up.

DISCUSSION

Physicians doing office ultrasound need adequate training which

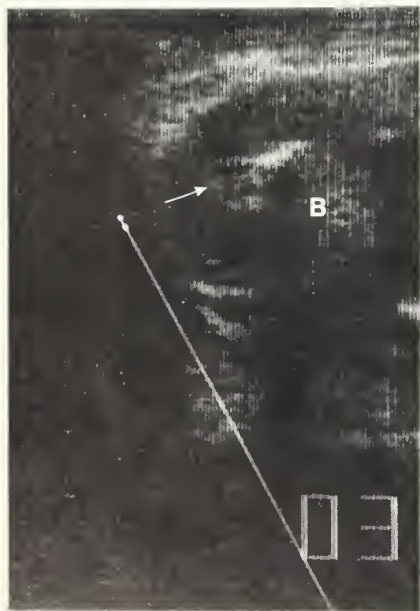


Figure 2: The meningomyelocele sac (arrow) is seen posterior to the fetal sacrum and body (B).

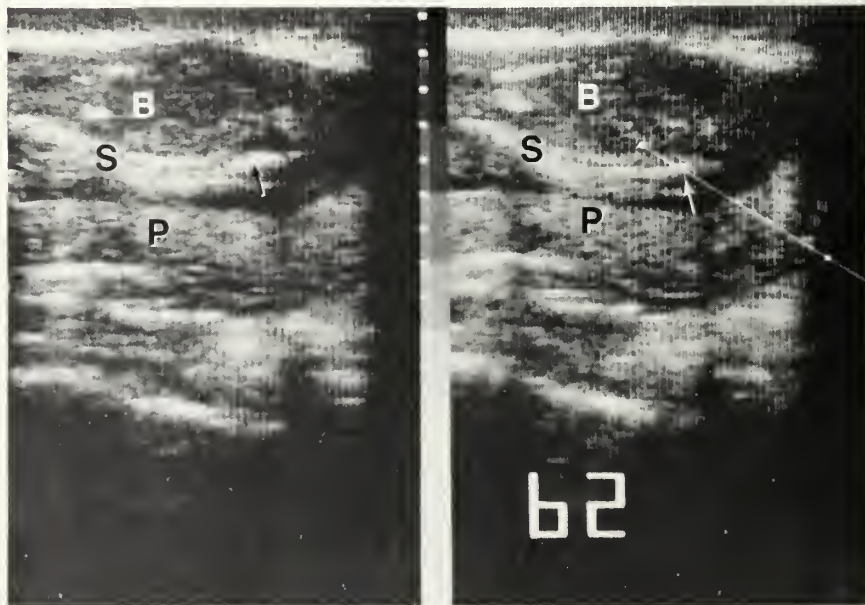


Figure 3: The defect is suggested by the increased width (arrow) of the fetal spine (S). (P = placenta).

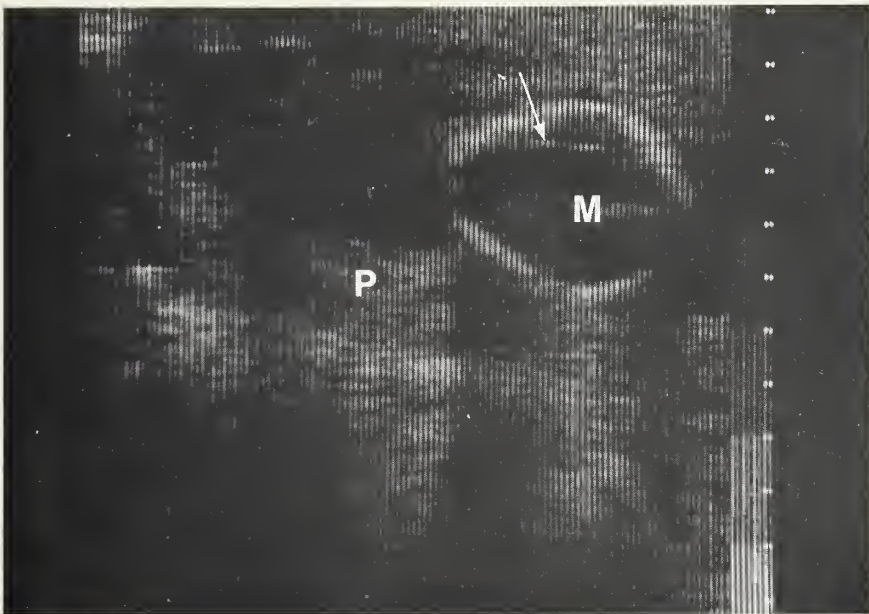


Figure 4: Dilated ventricles (arrow) of the case in Figure 3. (M = falx).

can be acquired through postgraduate courses and residency training. Using ultrasound to detect fetal anomalies requires training beyond that of most programs. We agree that diagnostic ultrasound should be categorized in two levels of skill designated Stage I and Stage II as proposed by the Society of Gynecologic and Obstetrical Ultrasonographers (SOGU) of the American Institute of Ultrasound in Medicine (AIUM).⁸

A Stage II sonographer should have available such ultrasound equip-

ment as a linear array, sector scanner, static B-scanner, proper recording equipment and a consultant who can do amniography if necessary to properly evaluate conditions associated with elevated MSAFP (Table IV). Based on our experience, about one-third of patients with elevated MSAFP and 80% of those with low MSAFP will have findings diagnosable by a Stage I ultrasonographer. The correction of gestational age, detection of multiple gestations, and diagnosis of fetal death, molar pregnancy and non-pregnancy are clearly within those capabilities. The two physicians performing advanced diagnostic ultrasound for this project detected six of seven anomalies. The one NTD missed by ultrasound and amniography could not be positively identified by amniography or static and linear array scans. This patient declined fetoscopy and elected to terminate the pregnancy because of suspicious ultrasound findings, two elevated MSAFP values, and positive amniotic fluid acetylcholinesterase and AFP. She was advised of the very rare possibility of a normal fetus with these findings. The fetus exhibited a flat, 1 cm sacral defect. A sector scanner was not available at that time but recent experience suggests that such a device may help in confirming the presence of such an NTD.

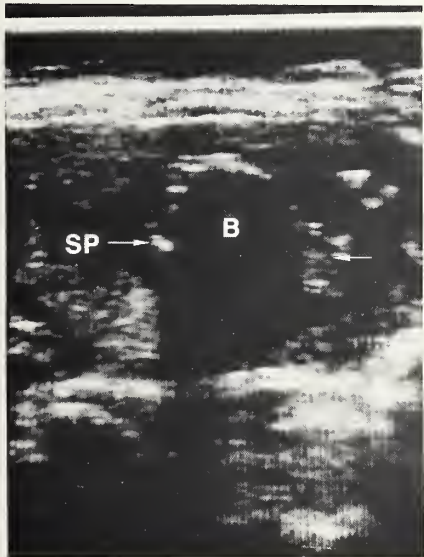


Figure 5: Protrusion of the pulsating heart (arrow) outside the fetal body (B) was noted on ultrasound. (SP = spine).



Figure 6: Fetus in Figure 5. No incision was made in the fetal body. All of the abdominal contents protrude through the defect.

Although the intent of a screening program is to identify pregnancies at high risk for NTD, the detection of erroneous gestational age, multiple gestation, fetal death, molar pregnancy, and non-pregnancy are additional positive benefits. This is particularly significant in that approximately one-third of the patients screened with ultrasound had one of these findings. By correction



Figure 7: Constriction (arrow) around the fetal fingers caused by an amniotic band.

TABLE III

Summary of Ultrasound Patients With Low MSAFP

	1979-1980		1980-1981		Total	Percent
	No.	Percent	No.	Percent		
Scanned	37	100.0	43	100.0	80	100.0
Dates less advanced	21	56.8	24	55.8	45	56.3
Fetal death	5	13.5	5	11.6	10	12.5
Dates correct	5	13.5	7	16.3	12	15.0
Not pregnant	0	0	6	14.0	6	7.5
Molar pregnancy	0	0	1	2.3	1	1.3
No follow-up	6	16.2	0	0	6	7.5

of gestational age and early prenatal detection of multiple gestations, the management of high risk patients is improved. One patient who elected to continue her pregnancy began early preparations for caring for a child with a NTD by talking to neurosurgeons and neonatologists. Delivery was planned to avoid injury to the sac and other complications.

It is not our intent to evaluate the pros and cons of a neural tube defect screening program. However, it seems likely that if screening were

expanded to include the entire state of North Carolina, many practicing physicians and ultrasound laboratories could screen at least one-third of the patients requiring such examination and refer the remainder to Stage II ultrasonographers. Prenatal screening for NTD by MSAFP appears to be useful in identifying these and other obstetrical complications.

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TABLE IV

Conditions Associated With Elevated MSAFP

1. Incorrect gestational age
2. Multiple gestation — either concordant or discordant for defects
3. Neural tube defects
4. Omphalocele/gastroschisis
5. Congenital nephrosis
6. Turner's Syndrome
7. Extrophy of a fetal organ
8. Fetal-maternal hemorrhage
9. Fetal death
10. Laboratory error

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TOBIAS SMOLLETT [1721-1771]

Had it been simply waking, he would have been obliged to them for the noise that disturbed him; for, in that case, he would have been relieved from the tortures of hell-fire, to which, in his dream, he fancied himself exposed. But this dreadful vision had been the result of that impression, which was made upon his brain by the intolerable anguish of his joints; so that, when he awaked, the pain instead of being allayed, was rather aggravated by a great acuteness of sensation.

The Adventures of Peregrine Pickle, Ch. 70

Primary Amenorrhea and Short Arm Deletion of the X Chromosome, 46,X,del(Xp). Report of Two Cases

Doyce G. Payne, M.D., and Jamil A. Fayez, M.D.

ABSTRACT Two patients with primary amenorrhea were evaluated clinically and cytogenetically and found to have short arm deletion of the X chromosome, 46,X,del(Xp). Both were observed to have stigmata suggesting chromosomal abnormalities at initial presentation. It is concluded that chromosomal evaluation is necessary for all women with primary amenorrhea to determine the precise etiology of the amenorrhea.

INTRODUCTION

THE advent of cytogenetics, radioimmunoassay, and improved methods of gonadal visualization has led to improved recognition of the varied causes of primary amenorrhea. Chromosomal abnormalities are found more often in these individuals than the 0.5% frequency of the population at large.¹ For the ovaries to be fully and normally developed, two XX chromosomes are needed. If one whole X chromosome or one of its arms (long or short) is missing, ovarian streaks develop. Simpson² gives an excellent synopsis of the abnormal chromosomal complements associated with gonadal dysgenesis, one of which is deletion of the X short arm. Two additional cases of this cause of primary amenorrhea are presented.

Case 1: A 22-year-old married female, gravida 0, had presented with primary amenorrhea at age 14. At that time she had been examined and told that she would begin men-

struating within a year or so. Repeat examination at age 17 was performed by a gynecologist and several lab tests were performed which the patient did not recall. She was advised then that she would never menstruate but was not told why. At age 19, she married and was begun on oral contraceptives to initiate monthly menstrual periods. When she was 22, the patient was referred for diagnosis and decision regarding therapy.

The patient's mother had menarche at age 14 and two sisters were already menstruating. Past history and social histories were noncontributory.

Physical examination revealed a healthy woman, weight 109 pounds, height 57 inches, and blood pressure 110/66 mm Hg. Breasts were adequately developed as were the pubic and axillary hair. No stigmata of Turner's syndrome were present except low set ears. Pelvic examination was within normal limits except no adnexa were appreciated.

Laboratory data included: serum follicle stimulating hormone (FSH), 97 mIU/ml (normal 5-40); serum luteinizing hormone (LH), 58 mIU/ml (normal 2-35); serum prolactin (PRL), 11 ng/ml (normal less than 25). Thyroid studies were all normal. Buccal

smear was approximately 20% positive for Barr bodies. Banding technique karyotype demonstrated one X chromosome with short arm deletion. No mosaicism was detected.

Laparoscopy revealed bilateral gonadal streaks; the pelvis was otherwise normal. Biopsies from both streaks showed fibrosis without primordial follicles.

Case 2: A 19-year-old single female, gravida 0, was referred with primary amenorrhea. The patient's general health has been good and the family history was unremarkable. Her mother and sister had begun menstruating without difficulty.

Physical examination revealed a healthy woman, weight 113 pounds, height 59 inches, and blood pressure 130/80 mm Hg. Breasts were small and underdeveloped and axillary hair was absent. A moderate growth of pubic hair was present in female distribution. No other stigmata of Turner's syndrome were present. Pelvic examination revealed underdeveloped external genitalia. The vagina was narrow and foreshortened with a palpable cervix and uterus. Ovaries were not felt.

Laboratory data revealed: serum follicle stimulating hormone (FSH),

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64 mIU/ml (normal 5-40); serum luteinizing hormone (LH), 70 mIU/ml (normal 2-35); serum prolactin (PRL), 8 ng/ml (normal less than 25). Thyroid function tests were normal. Maturation index revealed 0 superficial, 20% intermediate, and 80% parabasal cells. Buccal smear was 20% positive for Barr bodies. Banding technique karyotype demonstrated deletion of the short arm of the X chromosome at P11. No mosaicism was present. The patient's mother's karyotype was normal.

Laparoscopy revealed bilateral gonadal streaks with an otherwise normal pelvis. Biopsies from both streaks showed fibrosis without ova, follicles or corpora lutea. Patient's karyotype is shown in Figure 1.

DISCUSSION

The association between chromosomal abnormalities and gynecologic endocrinology is well known. Women with one X chromosome missing usually have stigmata of Turner's syndrome. Those women with long arm deletion of one X chromosome are tall and do not show evidence of Turner's syndrome. In a recent report,¹ 47% of a selected subfertile population demonstrated chromosomal abnor-



Fig. 1. Karyotype of Patient # 2, 46,X,del(Xp). Note the difference in the X chromosome.

malities, including three not previously described and five various forms of X chromosome deletions.

Short arm deletions of an X chromosome, del(Xp), result in gonadal dysgenesis, short stature, and several somatic anomalies. Approximately 40 cases have been reported.² The most commonly reported abnormality has been 45,X,del(Xp) or 45,X/46,X,del(Xp). Frequently, mosaicism accompanies the deletion modifying the phenotypic expression of the chromosomal anomalies.

Although most 45,X,del(Xp) patients have gonadal dysgenesis, some menstruate or show breast development.³ Specifically, menstruation occurred in about 25% of 45,X,del(X) (P11) individuals (the most common deletion, the break point occurring near the centromere) and in all five individuals in whom the break point was more distal (Xp21 or Xp22).²

This suggests that functioning ovarian tissue is seen more often in individuals with a short arm deletion than in 45,X individuals. Also, primary amenorrhea occurs more commonly if both the proximal and terminal portions of the short arm are deleted rather than only the terminal portion (i.e., Xp21 ter).²

All reported 46,X,del(Xp) individuals have been shorter than 60 inches (152 cm). Other features of the Turner stigmata are often, but not always, present. This suggests that the short arm of the X chromosome contains not only an ovarian but also a statural determinant.

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JACOB BIGELOW [1786-1879]

Most men form an exaggerated estimate of the powers of medicine, founded on the common acceptance of the name, that medicine is the art of curing diseases. That this is a false definition is evident from the fact that many diseases are incurable, and that one such disease must at last happen to every living man. A far more just definition would be that medicine is the art of understanding diseases, and of curing or relieving them when possible. Under this acceptation our science would, at least, be exonerated from reproach, and would stand on a basis capable of supporting a reasonable and durable system for the amelioration of human maladies.

Nature in Disease, Ch. 2

Stroke Rehabilitation

Christian F. Siewers, M.D.

ABSTRACT Stroke is a major cause of disabling illness in this country and most physicians are aware of developments in prophylaxis and acute medical management. Few physicians, however, are aware of what can be done to help the patient with residual disability reach a more independent status and higher quality of life.

Most stroke patients, even when severely impaired, can with proper care and instruction reach a level of independence where minimal help will be required of their families in home care. Too often, these patients are relegated to nursing homes without proper consideration of the benefits of a rehabilitation program.

A review of 100 consecutive stroke patients admitted to the Southeastern Regional Rehabilitation Center confirms that a high percentage of those, even when severely disabled, can be taught self-care and mobility and be discharged to their homes.

THE Comprehensive Stroke Center Program of North Carolina has been in effect since 1978 when the National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, awarded a contract to the North Carolina Heart Association with the Department of Neurology of the Bowman Gray School of Medicine of Wake Forest University, the Department of Epidemiology of the University of North Carolina School of Public Health, the Center of Health Studies at Research Triangle Park, and the Southeastern Regional Rehabilitation Center in Fayetteville participating.

The model developed at Southeastern Regional Rehabilitation Center was implemented in 20 hospitals in 15 counties of Southeastern North Carolina.

Its main purpose was to learn more about stroke from detailed data collection, to educate the public, patients and physicians on risks from stroke, and to improve techniques for rehabilitation. Patients suffering stroke were to be evaluated at three-, six- and 12-month

intervals after the acute episode, and functional status, social support systems, and the use of health care services assessed. A stroke nurse coordinator was identified in each hospital to supervise and coordinate the work of the therapeutic team cooperating with the patient's physician. This facilitated referral to a Rehabilitation Center, often accelerating patient recovery.

Although the grant supporting the study expired in May of 1981, much has been learned. Data are available for analysis. This paper describes our experience at the Cape Fear Valley Hospital and in the Southeastern Regional Rehabilitation Center in Fayetteville which is now supporting the stroke nurse and continuing the program developed here.

PATIENTS AND RESULTS

I have surveyed 100 consecutive admissions for stroke to the rehabilitation center beginning in January, 1980.

Individuals suffering stroke more than six months before entry have been excluded from analysis. Such patients are more difficult to help because their patterns of dependency are unlikely to change.

The average time between the

onset of the stroke and admission was 27 days; the shortest was seven days; the longest, four months. Those with such severe disabilities that they need rehabilitation usually require three to four weeks in an acute hospital before they are medically stable and able to transfer to the Center.

The average length of stay was 32 days. The shortest was that of a patient who was transferred to another rehabilitation center out of the state after three days. The longest stay was 10 weeks.

Ages ranged from 34 to 99 years, a mean of 65.

Sixty-five were white and 35 were black.

Forty-eight had right-sided involvement and 52 left-sided. Thirty-two (60%) of the right hemiplegics had dysphasia; only one of the left-sided was so afflicted.

Medicare was the major source of payment in 60 instances; 22 were on Medicaid; 43 had private insurance.

Eighty-six of these patients were discharged to their homes. Eight went to nursing homes and six were sent back to the acute hospital for complications.

The Barthel Index was employed to measure functional ability for disabled patients.¹ This system gives

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numerical values to such activities as feeding, grooming, bowel and bladder control, transfers and ambulation. A score of 60 seems to be a point at which patients move from dependency to assisted independence. A score of less than 40 is usually incompatible with regaining independence in ambulation and such basic acts as feeding, grooming and sphincter control will be beyond reach.

The average apparent Barthel score on admission in our patients was 39; the lowest was 0. On discharge, the average score was 70. The increase in functional ability averaged 30 points.

The cost of rehabilitation is approximately \$160 a day, including room and intensive therapies, so that the average stay of a month will cost about \$5,000. Many of our patients would otherwise have been sent to nursing homes at the cost of \$1,000 to \$1,400 a month. Thus, the cost of a month in rehabilitation is equivalent to four to five months in a nursing home.

Most patients sent home will remain in the community from one to three years or more as the mean survival time after stroke increases. Follow-up has shown many patients will maintain their gains and remain in a home setting.

DISCUSSION

Most stroke patients, even when severely impaired, can recover to the point that they can reach partial independence and return home to their families. The time needed to help such patients after they are medically stable (although still disabled) is difficult to find in the atmosphere of a busy general hospital. Both stroke victims and their families need to be taught in many areas and over a reasonable time to understand the disability and how a meaningful, independent life can be achieved. Too often, stroke patients are discharged from the hospital before they have been taught adequately or reached a level of independence commensurate with their abilities. The recovery of a stroke patient does not depend on the healing of the vascular lesion alone.²

All stroke patients should be con-

sidered for rehabilitation and the objective of rehabilitation programs should be to maintain patients' medical stability while improving their functional status and helping them and their families adjust to any residual long term disability.

About 10% of stroke patients will be unimpaired and not need further rehabilitation. About 40% will have relatively mild residuals, needing only follow-up therapies. About 40%, however, will need relatively long term intensive therapies, best provided in a rehabilitation center. The other 10% will be so devastated that they will not be teachable and nursing care only will be indicated.³

Patients who cannot be helped are usually those who have a dense receptive aphasia which limits their comprehension and ability to be taught, for rehabilitation is essentially a teaching process. Usually they will also have a dense right hemiplegia. Patients with hemi-sensory losses and visual field cuts, as well as those with visual perceptual problems and poor balance, may be unable to achieve the independence needed for home care. Usually these patients have a left hemiplegia.

The facilities and therapies needed for a comprehensive rehabilitation program must include barrier-free areas with many disciplines available to work with the patient in a team approach. Usually two sessions daily in physical therapy, occupational therapy and speech therapy will be needed. Services of recreation therapists, rehabilitation home economists and psychologists will often be needed as well. The objectives of individualized treatment programs based on the patient's specific disabilities and the team approach advocated are similar in all North Carolina rehabilitation hospitals.

Rehabilitation nursing is a specialty in its own right. These nurses are aware that unlike the other hospital nurses their job is to stand back to allow patients to help themselves in every way possible rather than to pitch in to help directly. At times, this takes considerable self-control. Good rehabilitation nursing care is of prime importance in progressing a patient toward independence.

Efficiency in programs of bladder

and bowel training and skin care are essential. Persistent efforts here will eventually pay off so that many patients who enter with indwelling catheters and incontinent stools leave with satisfactory sphincter control.

Each patient is instructed in each of his medications, why these drugs are given, and what the most common side effects are; and families are also instructed so that therapeutic mistakes may be avoided.

Physical therapists work generally with patients aiming toward mobility, teaching them how to turn in bed, how to transfer to wheelchairs, how to walk using the parallel bars, and how to walk with an assistive device, such as a walker or cane. About 75% of our patients will become independently ambulatory. For those who cannot, the cause is usually not of leg weakness but visual perceptual problems, balance, or severe neglect due to their reduced field cut and hemi-sensory loss.

We are constantly amazed at the recovery of some patients who have been densely involved initially. For example, a patient may not show any voluntary motion of the lower extremity, but on being placed in a standing position, he will exhibit a reflex synergy sufficient enough for weight bearing. When involvement is severe, functional use of the lower extremity is much more likely to be regained than is recovery of the arm.

Occupational therapy is really a misnomer because occupational therapists in rehabilitation centers have little to do with teaching occupations. They work to strengthen and improve coordination of the involved upper extremity, which can progress through flaccidity, to increased primitive reflex patterns, and on to isolated active movement. Where the progression stops will determine the prognosis. For example, the longer the flaccidity persists in the upper extremity, the poorer the prognosis. Loss of sensation is important here; as with sensory loss along with motor involvement, the outlook is poor. About two-thirds of patients with moderate upper extremity involve-

ment will not regain function. The rest will improve to the point of being assistive with the involved extremity, but few return to being functional.⁴

In addition to accessing range of motion to prevent stiffness of the joints of the involved extremity, the most important work of occupational therapists is to teach patients one-handed techniques and the use of adaptive equipment for the remaining functional hand. There are many such devices to help the patients use one hand. A motivated patient can become completely independent in dressing, grooming, bathing and feeding, and in most simple recreational activities.

Occupational therapists can, with the help of speech therapists, assist many patients in improving swallowing and speech and in decreasing facial droop.

Speech therapists are most important in stroke rehabilitation care. They can determine just how much receptive involvement is present and how well a patient can comprehend. If receptive aphasia is predominant, the prognosis is much poorer than if just expressive aphasia is present.

We physicians are often unable to

discern the level of receptive involvement and comprehension of patients and must turn to experts in the field.

We often think of speech therapists as teaching patients to talk, but they do far more than this. If patients can comprehend and respond, the therapist can teach other forms of communication, such as gestures, sign language, picture boards, or alphabet boards. Expressive aphasics may require therapy for a year or more so that great patience is required for victim, family and therapist.

Recreational therapists, appreciating the limitations of the involved upper extremity of the stroke patient, can pattern their activities to reinforce the exercise programs of other therapists. This helps to improve strength and coordination. Also, they are trained to combat boredom, so dangerous to the stroke victim, and to encourage the reentry of their patients into a productive existence. This they do through planning social and individual exercises which will restore the patient's self-confidence and make it easier for them to get along with others. Many stroke patients must re-establish

their places in their communities from which their illness has deposited them. Because of their limitations, they will require support in playing a new and somewhat restricted role. Here the recreational therapist can be most helpful and resourceful.

The housewife who has suffered a stroke may feel lost in her own kitchen, uncertain how to handle her utensils and machines. A rehabilitation home economist can be very helpful in evaluating such a patient's capacity and in teaching new ways of doing things. In such a way, a sense of personal mastery can often be regained and her house can again become her home.

Acknowledgment

I wish to thank Sandra Whittemore, Denise McKee, and Cynthia Halstead of the Southeastern Regional Rehabilitation Center and Stan Hall of the North Carolina Heart Association for their help in the preparation of this article.

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SIR ASTLEY PASTON COOPER [1768-1841]

Nothing is known in our profession by guess; and I do not believe, that from the first dawn of medical science to the present moment, a single correct idea has ever emanated from conjecture; it is right therefore, that those who are studying their profession should be aware that there is no short road to knowledge; and that observations on the diseased living, examination of the dead, and experiments upon living animals, are the only sources of true knowledge; and that inductions from these are the sole bases of legitimate theory.

A Treatise on Dislocations and Fractures of the Joints

Toxic Encounters of the Dangerous Kind

THE "BLUE" PEOPLE WITH "CHOCOLATE" BLOOD — METHEMOGLOBINEMIA

This is not a science fiction piece, so read on. The title refers to a poisoning that you can expect to see in your practice more than once in your lifetime if you remember what to look for. There are literally hundreds of compounds that, when ingested, can cause a person to become markedly cyanotic with chocolate colored blood — i.e., methemoglobinemia. This condition occurs when hemoglobin is oxidized at a rate that exceeds the reducing capacity of red blood cells. Normally, the iron in hemoglobin is in the ferrous (Fe^{++}) state and carries oxygen very well; in methemoglobinemia the iron in hemoglobin is in the ferric state (Fe^{+++}) and does not carry oxygen well. 1.5 - 2.0 g/dl of methemoglobin is enough to produce cyanosis.

Some of the products that can cause this condition are well known to us, others not so and too many are available over-the-counter. One of the largest class of offenders is the nitrate/nitrite group which includes amyl nitrite, butyl nitrite, foods containing nitrates, foods adulterated with nitrates, and nitrates in water. Butyl and isobutyl nitrite are of special interest as they are legal over-the-counter drugs that can be abused. These products are sold as perfumes, liquid incense and room deodorizers — in boutiques, "head shops," and record stores. With trade names such as Locker Room, Rush, Aroma of Men, etc., they are used and abused as aphrodisiacs, stimulants and psychedelic agents. They can cause methemoglobinemia if ingested.

Other chemicals that can turn your blood "brown" include the sulfonamides, aniline dye derivatives, (e.g., marking ink, shoe dye), phenacetin, acetanilid, pyridium and benzocaine containing products. Benzocaine is a very ubiquitous agent in many over-the-counter preparations, e.g., teething lotions, suppositories for anal fissures, hemorrhoids, locally applied ointments/creams for dermal pain relief, particularly.

When should you suspect the presence

of methemoglobinemia? One of the key clinical features is cyanosis that does not respond to oxygen therapy. The diagnosis can be suspected by the characteristic *chocolate brown color* of a freshly obtained blood sample. This blood sample does not become bright red when shaken in the presence of room air or when oxygen is bubbled through it. A good bedside test in the emergency room involves placing one drop of your blood (or your designee) and one drop of the patient's blood side by side on a piece of filter paper. If the patient's blood is more chocolate than yours (or your designee), then the patient probably has greater than 15% of his or her blood as methemoglobinemia. Spectrophotometric analysis of the concentration of methemoglobin is required for absolute diagnosis.

Generally, concentrations of 10%-25% methemoglobin cause cyanosis without other apparent harmful effects. Cardiovascular mechanisms for increasing the oxygen supply to the tissues are called into action at methemoglobin levels of 40% or above. At this level, in addition to cyanosis, the patient may complain of dizziness, fatigue, headache and exertional dyspnea. At 60% concentration big trouble may ensue — extreme lethargy, bradycardia, dyspnea, paralysis, unconsciousness and seizures. The lethal concentration is probably 70% and above. Failure of an oxygen supply necessary for sustaining life certainly could be expected at a methemoglobin concentration of 85%.

The first step in treatment is to remove any chemical or drug that you suspect could have initiated the methemoglobinemia. Patients with mild degrees of this poisoning will recover spontaneously because of the action of the enzyme methemoglobin reductase. (Almost all of us have a good supply of this enzyme.) If the methemoglobin level is 30%-40% and/or there is stupor, respiratory distress or angina, definitive treatment should be instituted. (Some suggest withholding specific therapy until the methemoglobin level is 50%-60%.) The definitive management of significant methemoglobinemia includes intravenous administra-

tion of 1% *methylene blue*. The dose is 1-2 mg/kg given slowly over a 5-minute period. This drug will correct the methemoglobinemia within 30-60 minutes. Oxygen should be given as well. Rarely is a second dose of methylene blue required. In extreme examples of this condition an exchange transfusion may be required. In the past, ascorbic acid has been used in patients with acute methemoglobinemia; however, it is not very efficient and cannot be recommended.

Methemoglobinemia is a fascinating entity and the literature contains many articles about this topic, but my all-time favorite reference is in the February 1977 issue of *Pediatrics*.¹ The article describes a pair of 4-month-old twins who were given "Spirits of Nitre" orally to relieve "fussiness." Both children became methemoglobinemic; one died. This substance (4% ethyl nitrite in 70% alcohol) has been in use in this country since before the American Revolution. Since 1778 it has

been manufactured here, when domestic pharmaceutical manufacture began in the young United States. Spirits of Nitre was an over-the-counter nostrum *produced continuously* here until 1980 when the FDA recalled it. All of the pharmacists that I questioned wished it was still available because of the volume of requests.

The next time you see a cyanotic patient not responding to oxygen, look at a sample of the patient's blood; if it looks chocolate it's not from eating too many Hershey bars.

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N.C. Chapter of the American
Academy of Pediatrics

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Editorials

A MATTER OF DEGREE: FREEDOM AND REGULATION

The AMA Council on Long Range Planning and Development has devoted considerable time and effort to identifying significant but currently obscure trends which can be expected to assume increasing importance in 1980 and beyond. One seems obvious — that competition between physicians may be keener, particularly if we really do have too many medical students currently enrolled in our medical schools. We can also expect more competition from non-medical and paramedical health providers, more pressure on our licensing bodies and greater efforts to cut costs.

From California has come a rather unusual proposal: deregulation of the medical profession by omission of enforcement of laws against unauthorized practitioners. How this would affect litigation is anyone's guess. Presumably if laws were not enforced, unlicensed practitioners could hardly be at risk. Yet the licensed physician would still be something of a resource to be exploited. This suggests that physicians might counter by declining to be licensed, practicing themselves without the blessings of the state. The licensed physician would retain exclusive use of the terms "physician," "medical doctor," and "M.D." But M.D. simply stands for a medical doctorate conferred before licensure.

Such action is proposed as a means of eliminating the "monopoly" in the provision of health services now assumed to be held by medical doctors. Strangely, this proposal emanates from California's Board of Medical Quality Assurance (BMQA). The executive director of BMQA urges the medical profession not to get excited but does assert that the economic justifications for the change "are quite substantial." A blessed assurance indeed!

There is an air of the unreal about such arguments for deregulation, one of which assumes that there is a free market in health care which should be so efficiently self-adjusting that abuses would be prevented by a mysterious natural prophylaxis. This reckons without the infinite vagaries of human personality and without looking through the eye to the past we call history. Several centuries ago Gresham's law — bad money drives out good — was propounded and has been confirmed many times over. The law might apply to medicine as well.

One of the favorite phrases of today's pundit is "the cutting edge," which peels away the superfluities of our daily existence leaving the truth bare, obvious and easily applied. Perhaps we need to make a favorite of another expression used by statisticians, "degrees of

freedom." As the exercise of totalitarian power clearly shows and as the Iranian anarchy also demonstrates, absolutisms of right and left regulate in the name of deregulation and deny any degree of freedom.

California's motto "Eureka" means "I have found it." The Golden State of course does not hold a monopoly on the use of the phrase. The hazard lies then not in the expression but in its application and what "it" turns out to be. If "it" attracts only true believers, not susceptible to analysis, reproducibility and confirmation, freedom could turn out to be the equality of slavery.

Where all things are equally valued, nothing is valuable.

J.H.F.

"TRUST ME"

One of the classical television commercials, with infinite variations, stars a just plain Bill, somebody you can trust, telling you what to buy. In today's editorial he runs a drug store in a small town, so small that it has been undiscovered by the larger chains. So he has time to know each customer personally and to prosper, although he never has more than one customer in his store. Why is it necessary to recreate yesterday to sell tomorrow?

What about tomorrow when it will be necessary to recreate today? We are told that electronic shopping is on the way, that it is the way of the future. At home we will sit at our computer terminals or cable TVs, punching through our orders without touching the merchandise. Deliveries will come directly from the warehouses which will probably move into our shopping centers vacated of department stores, shoe shops and boutiques by the new catalogue culture.

This revolution in provision and consumption will certainly affect medicine. The Food and Drug Administration will insist that consumers have instant package inserts available to check their prescriptions so the *Physicians' Desk Reference* will almost certainly be made available on the computer. Comparison shopping will be obligatory so battle between generics and trademarks will be joined. Chain drug stores of tomorrow struggling to get a piece of the patient care action will offer educational programs on cable television. The pharmacist of yesterday, compounding and exponent of Dr. Caldwell's Syrup of Figs and Fletcher's Castoria ("Children love it, babies cry for it.") will probably be exiled to memory.

Computer programmers will be challenged by drug size, color and shape. Taste once so important in the days of compounding will have to be converted to

promise. Folk beliefs will have to be appealed to — a sort of partnership between computer and consumer established for greater self-therapeutic reward. Meanwhile public TV will counter-program its concerns about drug safety, effectiveness and cost. The AMA may have to enter the marketplace offering as a public service some instruction about quality control in drug manufacture, bioavailability, volumes of drug distribution, drug half-lives and receptor sites.

The major problems for industry will be the establishing and maintenance of reputation, the "trust-me" aspect, and overcoming difficulties in being innovative in advertising laxatives, analgesics, vitamins and preparations for hemorrhoids and female hygiene. What sort of displays will be devised to take the place of the counter where these staples currently reign? How will competition be assured and quality maintained? It sounds like a showdown between the Federal Trade Commission and the Food and Drug Administration.

Does all this sound visionary, the prattling of an eccentric? It may well be but there are hints from other fields. The *New Yorker*¹ reports that the fashion industry is already figuring out how to put an L.L. Bean or a Bergdorf-Goodman catalogue on a video-disk and is inviting demographic experts to help with regionalization and stratification of appeal. What for example are the expectations of lower-income residents of California contrasted to the poor Texan in all income brackets?

Medicine has been fashionable for some time as the proportion of the gross national product spent on health care testifies. What actually are our medical shopping habits today? How will electronic shopping change this and affect our spending? If we don't know, how can we find out? Tune in tomorrow!

J.H.F.

Reference

1. Fraser K: On and Off the Avenue. Feminine Fashions. *The New Yorker*. May 11, 1981.



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From The Desk of The Managing Editor

CHEMICAL QUESTIONS

The question of whether the cancer rate is decreasing has been a continuing controversy in the field of public health. For years many experts argued that, discounting cancers caused by smoking, the rate was decreasing noticeably. But in 1980 the National Cancer Institute published evidence demonstrating a rise in the rate during the 1970s. The data may have reversed the general opinion. In 1979 the American Cancer Society's "Cancer Facts and Figures" claimed that the cancer rate had decreased slightly in the past 25 years, whereas, in 1980 the publication stated that, while the rate had decreased slightly from 1947 to 1970, it had increased between 5 and 10 percent since 1970.

Although interpretation of these data is not without problems, the implications of an increase in the rate of cancer are wide-ranging. Public health, governmental policy, and the economy are all affected inasmuch as some attribute this increase to exposure to chemicals. The timing is critical. It was not until after World War II that industry in the United States began to produce large quantities of radioactive substances and synthetic chemicals. Most cancers have a latency period of 20 to 30 years; thus, with industry continuing to grow, one must be concerned that the cancer rate will too.

The health care community faces many questions concerning health effects from chemical wastes. The problem is compounded by the difficulties in the identification and monitoring of hazardous substances (See *Science* January 29, 1982). However, physicians are looked to for answers about health effects once the potential for human exposure is established. But just what are the relevant questions?

Is it toxic? Once identified, the chemicals may or

may not pose a health threat. Toxicity data on the chemicals are necessary to answer this question.

Are toxicity data available, and, if so, where can they be obtained? Data continue to be collected by various groups, including the National Toxicology Program, but much more needs to be done. Of the nearly 300 chemicals identified at Love Canal, toxicology data were available on barely half. Efforts to coordinate information collection in a central data bank system are beginning with help from the National Library of Medicine.

What substances can be measured in tissues? What is the level of exposure? Compounding the problem of identifying the level of exposure is the lack of background data. In the aftermath of Love Canal and other such experiences, measurements being taken to determine "background" levels of chemicals have shown that most Americans have a body burden of diverse chemicals from the environment. Thus, in order to determine an increase in exposure, good data on background must be available. Many questions remain concerning what substances can be measured in tissues and how.

Do the chemicals cause any specific illness? Certainly, all of these questions address the need for information to protect the public health. The health effects from chemical wastes are rarely specific, but they are often cancer, or effects on reproductive performance, on the unborn or newborn infant.

Answering these questions is not an easy task. As the cancer debate shows, identifying a health threat is an on-going — some say never-ending — process. And complicating the matter are the political and economic aspects of the process.

(Coming next: What is North Carolina Doing About Hazardous Waste?)

A.A.H.

National Institutes of Health

CONSENSUS DEVELOPMENT CONFERENCE STATEMENT: THE DIAGNOSIS AND TREATMENT OF REYE'S SYNDROME

A Consensus Development Conference was held at the National Institutes of Health (NIH) on March 2, 3, and 4, 1981, to address issues on the diagnostic criteria and treatment of Reye's syndrome.

At NIH, consensus development conferences bring together investigators in the biomedical sciences, practicing physicians, consumers, and advocate groups to provide a scientific assessment of technologies, including drugs, devices, and procedures, and to seek agreement on their safety and effectiveness.

On the first two days of the meeting, a consensus development panel and members of the audience reacted to evidence presented on the following questions:

- What are the key signs, symptoms, and laboratory findings of Reye's syndrome?
- What is the evidence for the effectiveness of the various treatments of Reye's syndrome?
- What are the clinical and experimental studies needed to advance our ability to diagnose and treat Reye's syndrome?

The members of the panel represented the disciplines involved in the diagnosis and treatment of those with Reye's syndrome. Panelists were nominated by seven specialty associations: the American Academy of Neurology, the American Academy of Pediatrics, the American Association of Neurological Surgeons, the American Society of Anesthesiologists, the American Academy of Family Physicians, the Child Neurology Society, and the American Nurses Association. This summary is the result of the panel's deliberations.

Members of the Consensus Development Panel were: Philip R. Dodge, M.D., Chairman; Stuart B. Brown, M.D.; Walton L. Ector, M.D.; Peggy C. Ferry, M.D.; Stuart C. Hartz, Sc.D.; Earl C. Hutchins, M.D.; James P. Keating, M.D.; David G. McLone, M.D., Ph.D.; Georges Peter, M.D.; Mark C. Rogers, M.D.; Theodore Safford, Jr., M.D.; James F. Schwartz, M.D.; Elise Wear, M.S., R.N.

Reye's syndrome is a life-threatening illness that affects children of all ages, with a peak incidence between 5 and 15 years; on rare occasions it has been reported in adults. Although Reye's syndrome (encephalopathy with fatty degeneration of viscera) has

been extensively investigated since the classic description of the disorder by Reye, Morgan, and Baral in 1963,* the etiology and pathogenesis of this disease process remain obscure. The subcellular insult appears to affect mitochondria in multiple organ systems. Since prompt treatment may provide a better chance for complete recovery, early diagnosis is important.

Dissemination of information is recommended. This includes information on the early symptoms of Reye's syndrome, diagnostic criteria, and essential aspects of therapy. Such information should be distributed to parents, physicians, and nurses to facilitate early recognition, diagnosis, and treatment.

1. What are the key symptoms?

Reye's syndrome should be suspected in a child who, during or while recovering from a viral illness (most commonly chicken pox or influenza), unexpectedly develops repetitive vomiting and altered behavior such as lethargy, confusion, irritability, or aggressiveness. Neither fever nor jaundice is usually present. In children under one year of age, respiratory disturbances such as hyperventilation or apneic episodes may be prominent. In this special group (<1 year old) seizures occur more frequently than in older patients. All children with the above pattern of illness should receive prompt medical attention.

2. What are the laboratory findings in Reye's Syndrome?

Helpful laboratory tests include the level of transaminases in serum, ammonia concentration in blood, and prothrombin activity. The activity of serum transaminases is at least three times upper normal limits, prothrombin time is usually prolonged, and blood ammonia concentration is commonly elevated. Jaundice is conspicuously absent and serum bilirubin is rarely elevated. The concentration of glucose in blood is usually normal, especially in children 4 years of age and older. The cerebrospinal fluid (CSF) generally contains fewer than 8 cells per mm³ and normal protein and glucose concentrations, except when there is concomitant hypoglycemia. Other recommended laboratory tests include determination of the concentration of glucose, calcium, and phosphorus in blood and of serum amylase activity. Serum should be analyzed for salicylate and acetaminophen contents.

*For a description of the disorder in North Carolina in 1963, see: Johnson, GM, Scurletis, TD, Carroll, NB: A study of sixteen fatal cases of encephalitis-like disease in North Carolina children. *North Carolina Medical Journal* 24: 10:464-473, 1963.

3. Where should a patient be treated?

It is most important that primary care practitioners be highly aware of Reye's syndrome and perform appropriate laboratory investigations promptly. Children with a history and laboratory findings suggestive of Reye's syndrome should be hospitalized for careful observation and receive glucose by intravenous infusion. Patients with Stage II symptoms or worse (Table 1) should be cared for in a pediatric intensive care unit by a multidisciplinary team according to an established protocol, when available.

If the diagnosis of Reye's syndrome is made by a primary care physician, that physician should consult with colleagues in a pediatric intensive care center and discuss transfer. The transport team should be prepared to provide support for vital functions.

4. What are the currently used rating or classifying systems for measuring the severity of clinical symptoms? How useful are they?

A variety of staging systems based upon neurologic findings have proved useful in assessing the severity of the illness, monitoring the effect of therapy, and predicting ultimate outcome. The multiplicity of staging systems, however, has been confusing for clinicians and researchers alike.

5. Should a uniform system be recommended for general use?

The panel reviewed a number of proposed staging systems and recommends the one offered in Table 1 for use in management and study of Reye's syndrome. Patients with high concentrations of ammonia in blood early in the course of disease appear to have a less favorable prognosis.

6. When is a liver biopsy needed?

The diagnosis of Reye's syndrome can be made in most patients without a liver biopsy, a procedure not to be undertaken lightly in an uncooperative, critically ill child with defective coagulation. The results may confuse rather than inform unless the tissue is processed and interpreted by personnel with special knowledge of the illness.

Nevertheless, a carefully planned biopsy, after correction of the coagulation abnormality, can provide

important information in certain specific situations. Biopsy should be considered in: (1) infants, (2) children with recurrent episodes, (3) familial cases, and (4) non-epidemic (sporadic) cases without antecedent infection or vomiting. Biopsy also increases the certainty of diagnosis and is important if a new and potentially dangerous therapeutic regimen is planned.

7. What other conditions may present with similar symptoms?

There is a lengthening list of illnesses that may be temporarily misidentified as Reye's syndrome. We now recognize that transaminase elevations may occur in children with varicella without Reye's syndrome and in shock or hypoxia due to a wide variety of illnesses. Intramuscular injections (especially of a commonly used antiemetic, chlorpromazine) and protracted seizures may increase levels of transaminases in serum in a variety of diseases which affect the central nervous system. Methyl bromide, hypoglycin (senecio alkaloid), isopropyl alcohol, folk remedies (pyrrolizidine and margosa oil), aflatoxin, lead, and some drugs (e.g., aspirin, acetaminophen, and valproic acid) may produce disturbances of consciousness and elevation of serum transaminases.

When confronted by familial or recurrent occurrences of Reye-like illness, the physician should consider inborn errors of metabolism, especially systemic carnitine deficiency, glutaric acidemia, ornithine transcarbamylase deficiency, or hereditary fructose intolerance.

8. What special diagnostic tests are needed?

Computerized transaxial (CT) brain scanning is neither necessary nor indicated for diagnosing Reye's syndrome unless there is clinical suspicion of another disease, e.g., subdural hematoma, brain abscess, etc. Thus, CT scanning is not an integral part of diagnostic evaluation. If, however, the test is done early in the course of illness, it will show a normal pattern or evidence of diffuse brain edema, with no displacement of ventricles or localized areas of enhancement.

The usefulness of electroencephalography (EEG) depends on the availability of appropriate equipment and individuals skilled in EEG interpretation. In general, the EEG has not proved to be helpful in following patients, determining prognosis, or altering treatment.

TABLE I.—Staging of Reye's Syndrome

	I	II	III	IV	V
Level of consciousness	Lethargy; follows verbal commands	Combative/stupor; verbalizes inappropriately	Coma	Coma	Coma
Posture	Normal	Normal	Decorticate	Decerebrate	Flaccid
Response to pain	Purposeful	Purposeful/nonpurposeful	Decorticate	Decerebrate	None
Pupillary reaction	Brisk	Sluggish	Sluggish	Sluggish	None
Oculocephalic reflex (Doll's eyes)	Normal	Conjugate deviation	Conjugate deviation	Inconsistent or absent	None

PRACTICE MANAGEMENT

Appointment Scheduling

From the American Medical Association
Department of Practice Management

Wouldn't you be perturbed if you had a 9 am appointment with an attorney and then you weren't seen until 10:30? Of course you would. Your time is valuable.

Yet many doctors seem unaware that they are treating their patients in the same cavalier manner--making them wait for long periods of time with nary a hint of explanation or apology. Studies consistently show that time spent waiting in a doctor's office ranks second only to health care costs as patients' biggest health-related complaint. A patient's time, after all, is just as valuable to him or her as your time is to you.

Foul-ups in appointment scheduling affect your practice in more direct ways as well. Bad scheduling inevitably results in long work days, missed lunches, and decreased productivity for both you and your staff. Over time, the combination of patient dissatisfaction and staff fatigue which arises from a bad scheduling system can cause your practice irreparable harm. The plain fact is that in today's competitive physician market neither patient nor employee has to endure such inefficiency if he or she chooses not to.

What is especially unfortunate about a faulty appointment schedule is that much of the irritation can be eliminated. There will always be some things which throw the best of schedules into disarray, but the overwhelming conclusion drawn by the American Medical Association's Department of Practice Management, after surveying doctors and medical assistants each year, is that most of the every day occurrences which play havoc with an appointment schedule can be anticipated and planned for and their effects minimized.

Here are some common-sense things which you, the doctor, can do to improve the appointment scheduling in your office:

- Customize your appointment books. This takes a little time and effort, but it's well worth it. First, record the average time it takes you to see a patient for each of your most common procedures. Record also the average number of "time stealers"--work-ins, walk-ins, and telephone calls--which you usually encounter for each day of the week. Then have your appointment books custom printed to incorporate these findings into your daily schedule. You will then be allotting

to each patient the approximate amount of time it actually takes you to treat an "average" patient. Time must also be set aside for your anticipated walk-ins and telephone calls, or you will inevitably fall behind. These "interruptions" vary from day to day, so you should have a customized schedule for each day of the week. Monday is usually the most hectic.

- Schedule realistically. Once you know how long it takes you to see patients, make call-backs, etc., allow yourself sufficient time to meet these obligations. Doctors who consistently overbook their schedules thinking that this will increase their productivity are only fooling themselves.
- Try cluster scheduling. Scheduling patients with similar problems or needs back to back--or cluster scheduling--allows both doctor and assistants to render care to these patients by repeating the same procedures. Studies have shown that this can maximize the quality of time spent with each patient and improve overall appointment efficiency.
- Listen to your medical assistants. They're the ones on the "firing line" every day juggling two very different sets of expectations--yours and your patient's. They are your best source of suggestions for what might improve scheduling.
- Don't make appointments behind your assistant's back. Get into the habit of asking your patients to make appointments through your office. Such a small change in your procedures may dramatically decrease the number of walk-in patients.
- Don't reward bad behavior. Every time you see a walk-in ahead of your scheduled patients, or see an early arrival before his or her scheduled appointment time, you are educating your patients to ignore your office policies regarding appointments. Establish such policies carefully, then stick by them and expect your patients to stick by them.
- Be conscious of your own time habits. Try to arrive for all scheduled appointments on time. If you know that morning hospital rounds will take until 9:30 am, don't schedule patients before 9:30 am. Let your actions show that you respect the value of your patients' time.
- Communicate with your patients about emergencies. Patients understand that the most carefully planned schedule may sometimes be disrupted by an emergency. Most patients understand the inconvenience caused by this, realizing that they too may some day need your emergency care. But patients do resent waiting for long periods of time with no explanation. If you know you are going to be significantly delayed, let your assistant know so that she can inform your patients and give those waiting a chance to re-schedule.

9. What have been the indications for intracranial pressure monitoring? What devices are available? What are the goals in reducing intracranial pressure and when can monitoring be stopped?

Since 1975, several reports have suggested that invasive monitoring of intracranial pressure may be useful in the management of children with Reye's syndrome. The devices in use can provide continuous measurement of pressure in the epidural, sub-arachnoid, or ventricular spaces. The difficulties inherent in assessing the usefulness of this procedure, employed to monitor rather than to treat, have produced conflicting opinions. Some physicians believe it improves their ability to manage patients; others do not. Mortality and morbidity directly attributable to monitoring devices appear to be low in the medical centers where they are used frequently. Data are inconclusive regarding criteria for discontinuation of such monitoring.

10. What are appropriate therapies in the noncomatose patient?

Therapy for Stage I patients includes administration of fluid containing dextrose. While there are no studies documenting that glucose administration in excess of that provided by a 5 percent solution at maintenance rate is definitely beneficial, a number of considerations have prompted many clinicians to administer 10 percent solutions to these mildly affected children.

If neurologic deterioration occurs, the rate of fluid administration must be adjusted to maintain critical organ perfusion. Episodes of hypotension have been reported with maintenance rate of fluid administration, osmotic diuresis following.

For many reasons, hemodynamic monitoring is important. Arterial catheters permit continuous blood pressure measurement and frequent arterial blood-gas sampling. Central venous catheters may provide useful data concerning blood volume and cardiac function, while pulmonary artery catheters (permitting measurement of cardiac output) may be helpful in some seriously ill children. While central venous catheters may be preferable in patients with normal cardiopulmonary function, the management of complicating cardiac dysfunction due to disease or drugs may make more complete monitoring necessary.

Intubation of patients with Reye's syndrome has received general acceptance, although there is disagreement as to criteria for intubation. There is agreement that intubation should be elective (i.e., prior to respiratory failure or cardiac arrest). It is most often prompted by approaching toward coma and intravenous succinylcholine and barbiturate are employed to facilitate the process.

11. What are the important metabolic derangements and are they amenable to treatment?

There are many metabolic derangements in Reye's syndrome, including hypoglycemia, hyperammonemia, hyperlactatemia, short chain fatty

acidemia, hypophosphatemia, hyperaminoacidemia, azotemia, hyperuricemia, elevations of several hormones, and a mixed acid-base disorder. The relationship of the finding to the severity or treatment of the disease remains speculative. Although the degree of metabolic perturbation roughly parallels the severity of clinical illness, efforts (dialysis, amino acid infusion, phosphate and insulin infusions) to correct specific metabolic abnormalities have not clearly altered outcome.

Administration of vitamin K is generally accepted, although it is recognized that it is unlikely to fully correct clotting abnormalities. If significant bleeding occurs, exchange transfusion with fresh blood or administration of fresh frozen plasma may be helpful.

12. What are the therapies for increased intracranial pressure?

While the encephalopathy of Reye's syndrome is not always associated with increased intracranial pressure, such elevations frequently complicate the course of patients in coma. In lieu of specific treatment of the encephalopathy, much effort has been directed to the control of increased intracranial pressure. Measures commonly employed include osmotherapy and spontaneous or controlled hyperventilation. Experimental measures include high-dose barbiturates, corticosteroids, CSF withdrawal, and decompressive craniotomy. Use of newer techniques of monitoring and treating cerebral edema should be reserved for centers experienced in the diagnosis and management of children with severe neurologic disorders. To date, groups employing these experimental measures have failed to demonstrate better survival rates than those providing usual intensive supportive care.

13. What therapies are directed at removal of presumed toxins?

Exchange transfusion, dialysis, total body "wash-out," charcoal hemoperfusion, and plasmapheresis have all been suggested as potentially helpful by removing an unidentified toxic substance from patients with Reye's syndrome. There is no evidence that the use of these techniques improves outcome.

14. What are the residual findings?

Complete recovery may be expected in the majority of patients who survive the acute illness. However, some children who experience coma may suffer brain damage resulting in developmental delay, motor impairment, or mental retardation. Normal functioning in school may be delayed for some weeks. Children may be able to do the prescribed school work, but at a slower rate. Sometimes easy distraction, inattention, and memory problems occur.

Anxiety and apprehension associated with fear of bodily harm and death are frequently encountered in these children during hospitalization and after discharge. Such fears can be helped by gentle parental support. Overprotectiveness of the child by the par-

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is the presenting
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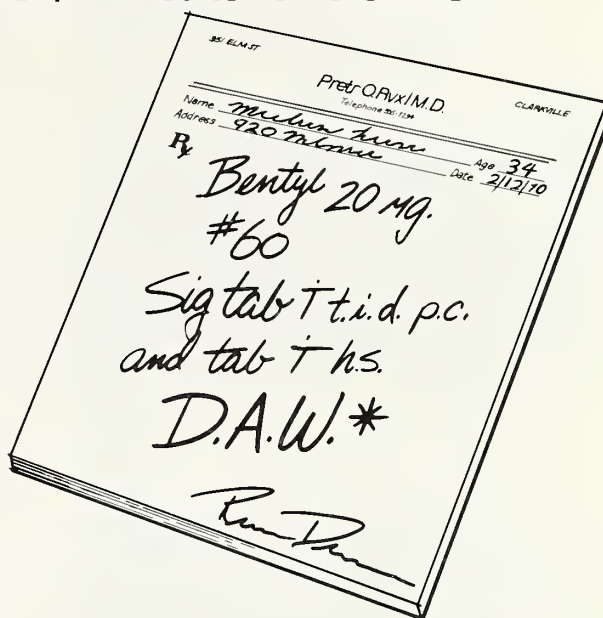


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*This drug has been classified "probably" effective for this indication.

Merrell Dow

Reference:

1. Chowdhury AR and Lorber SH: Personal communication, 1980.

(See Product Information on the next page before prescribing Bentyl.)

Although the dose of Bentyl used to show pharmacologic effect was 50 mg, which is a higher single dose than that permitted in the labeling, the dose was considered justified, since the recommended daily dose of injectable Bentyl is 20 mg (2 ml) every 4 to 6 hours. Thus, in 8 hours, a patient could receive a total of 60 mg I.M. and, at that time, as a result of the sustained plasma levels from the 20 mg injections at 0 and 4 hours, might show an even higher plasma level than occurs after a single 50 mg dose. Presumably, the same pharmacologic effect would follow. These observations do not constitute evidence of efficacy.

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Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis.

WARNINGS: In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. There are rare reports of infants, 6 weeks of age and under, administered dicyclomine hydrochloride syrup, who have evidenced respiratory symptoms (breathing difficulty, shortness of breath, breathlessness, respiratory collapse, apnea), as well as seizures, syncope, asphyxia, pulse rate fluctuations, muscular hypotonia, and coma. The above symptoms have occurred within minutes of ingestion and lasted 20 to 30 minutes. The timing and nature of the reactions suggest that they were a consequence of local irritation and/or aspiration rather than a direct pharmacologic effect. No known deaths or permanent adverse effects have been reported. Bentyl syrup should be used with caution in this age group.

PRECAUTIONS: Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy.

Use with caution in patients with:

Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon.

Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension.

Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur.

ADVERSE REACTIONS: Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia; increased ocular tension; loss of taste; headache; nervousness; drowsiness; weakness; dizziness; insomnia; nausea, vomiting; impotence; suppression of lactation; constipation; bloated feeling, severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation.

DOSE AND ADMINISTRATION: Dosage must be adjusted to individual patient's needs.

Usual Dosage

Bentyl 10 mg. capsule and syrup: *Adults:* 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (Dilute with equal volume of water.)

Bentyl 20 mg. *Adults:* 1 tablet three or four times daily.

Bentyl Injection: *Adults:* 2 ml. (20 mg.) every four to six hours intramuscularly only.

NOT FOR INTRAVENOUS USE

MANAGEMENT OF OVERDOSE: The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine® (bethanecol chloride USP) should be used.

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ents can accentuate behavioral or school problems and should be avoided.

Extensive psychological and educational testing appears to be unnecessary except in a study setting. Assisting school personnel to appreciate individual needs of the recovering child may be necessary. Family guidance and counseling may be useful and are encouraged.

15. What are the areas of future research?

Potential areas of research include: epidemiology, etiology, pathogenesis, diagnosis, management, and outcome. Most important is elucidation of the etiology and pathogenesis of this syndrome, with prevention as the ultimate goal.

Epidemiology

The low incidence of this disease results in small numbers of patients available for study at any single institution. The designation of a specific diagnostic code for Reye's syndrome in the International Classification of Diseases (10th Revision, Clinical Modification) would facilitate the determination of a more accurate incidence rate for Reye's syndrome.

Studies stratifying cases by age, sex, and race, by socioeconomic and environmental characteristics, and by geographic areas and location of residence (urban, suburban, rural) are needed to elucidate factors which may be important.

Etiology

Although the etiology of Reye's syndrome remains unknown, an association with a recent viral infection, especially influenza B and varicella, is well-established. However, the development of Reye's syndrome following any of these viral infections is uncommon, and why an individual develops the disease deserves further study. In addition, three recent population-based case-control studies have demonstrated an apparent association between salicylate usage and Reye's syndrome. Since the specific questions posed to the panel and discussed at the consensus conference were limited to diagnosis and treatment, the data on which this association is based were not presented but were discussed by several participants in the conference. Each of the three studies indicates an increase in the estimated relative risk of Reye's syndrome, which does not appear to be due to chance. However, other possible explanations of this association include the following: potential phases such as case-control selection (e.g., comparability of antecedent illness), information gathering (e.g., based on recall), and confounding (e.g., indications for salicylate use).

Parents and physicians should be aware that most, if not all, medications have potential deleterious effects; thus, caution in the use of salicylates in children with influenza or varicella is prudent. Currently, the risk is unknown for salicylates or for other antipyretic medications. Since salicylates have been given to children

with illnesses predisposing to Reye's syndrome without adverse effect, and cases have occurred in which these drugs have not been administered, salicylates alone cannot be responsible for its development. However, certain similarities between salicylism and Reye's syndrome and those studies reporting an association between the syndrome and salicylate ingestion indicate a need for carefully designed studies before recommending changes in antipyretic therapy of children.

The role of influenza and other viruses, aflatoxins, and genetic predisposition also deserve study.

Diagnosis

Although guidelines for the recognition of Reye's syndrome are generally accepted, information on the validity of the many proposed screening (clinical and laboratory) tests is incomplete and based on small numbers of patients or nonuniform diagnostic criteria. Particular attention should be given to determining the sensitivity, specificity, and predictive values of these various tests.

Management and Outcome

Critical and comparative evaluation of the treatment of Reye's syndrome can only proceed within the framework of randomized controlled trials. A need exists for determining the best available monitoring procedures, seeking the most sensitive indicators of patient status while exposing the patient to the minimal risk. Evaluations of treatment and monitoring regimens require strictly defined protocols and a sample size necessary for statistical analysis.

Both the short- and long-term sequelae of Reye's syndrome should be evaluated. Subtle effects on mental and motor capabilities should be evaluated by longitudinal data analysis. When possible, evaluations should be conducted without knowledge of the patient's treatment or monitoring regimens.

(The conference was sponsored by the National Institute of Neurological and Communicative Disorders and Stroke and co-sponsored by the National Institute of Allergy and Infectious Diseases; the National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases; the National Institute of Environmental Health Sciences; the National Institute of Child Health and Human Development; and the Division of Research Resources. Collaborating agencies included the Centers for Disease Control and the National Center for Health Statistics. Assistance was provided by the Office for Medical Applications of Research, NIH.)

Editor's Note: The North Carolina Division of Health Services, Communicable Diseases Department, states that in 1979, 11 cases of Reye's Syndrome were reported; in 1980, 14 cases; in 1981 (through November), 5 cases.

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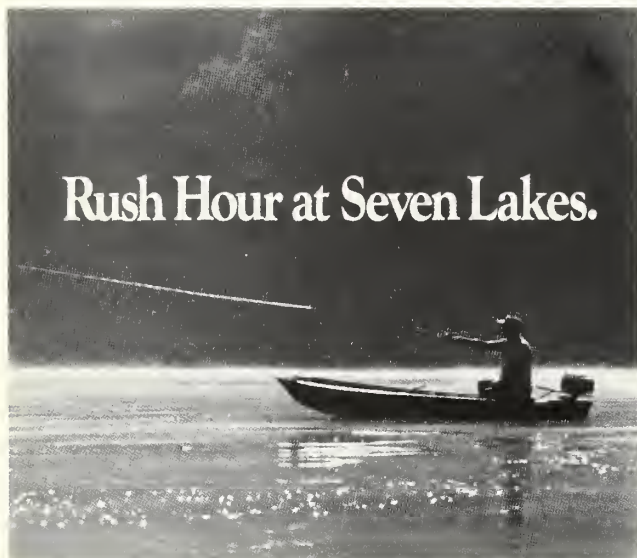
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April 6

"Greensboro Academy of Medicine Spring Symposium — Combined Approach to Common Medical Problems"

Place: Jefferson Standard Country Club, Greensboro

Credit: 6 hours

Info: W. H. Turner, M.D., 919-373-1383

April 29

"11th Annual New Bern Symposium: Emergency Medicine"

Place: Ramada Inn, New Bern

Info: William B. Hunt, Jr., M.D., Symposium Director, P.O. Box 2157, New Bern, NC 28560

May 14-15

"Chronic Disease Prevention and Health Promotion"

Place: Asheville

Info: Paula Schubert, Office of Continuing Education, UNC-CH School of Public Health 251-H, Chapel Hill, NC 27514 919-966-4032

May 19

"Infectious Disease Control"

Place: Central Carolina Hospital, Sanford

Fee: \$12

Credit: 2 hours

Info: R. S. Cline, M.D., Director of Continuing Medical Education, Central Carolina Hospital, 1135 Carthage Street, Sanford, NC 27330, 919-774-4100, Ext. 394

May 19-21

"North Carolina Heart Association Scientific Sessions"

Place: Winston-Salem

Info: The N.C. Heart Association, PO Box 2636, Chapel Hill, NC 27514, 919-968-4453

May 21

"Pediatrics Day 1982"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, NC 27834

May 21-23

"Eleventh Annual Pediatric Pulmonary Disease Conference"

Place: Searle Center, Duke University Medical Center

Fee: \$50

Credit: 12 hours

Info: Alexander Spock, M.D., Box 2994, Duke University Medical Center, Durham, NC 27710, 919-681-3364

Out-of-State — Southeastern Region

May 5-8

"63rd Annual Meeting of the Virginia Society of Ophthalmology and Otolaryngology, Inc."

Place: Williamsburg, Virginia

Info: Donna Strawderman, 4205 Dover Road, Richmond, VA 23221, 804-353-2721

May 7-9

"First Scientific Symposium of the Carolina-Virginia Society of Critical Care Medicine"

Place: Williamsburg, Virginia

Fee: \$100

Credit: 10 hours

Info: Pat Mendenhall, Education Coordinator, Dept. of Anesthesiology, UNC School of Medicine, Chapel Hill, NC 27514, 919-966-5140

May 12-14

"Clinical Auscultation of the Heart"

Place: Georgetown University Medical Center, Washington, D.C.

Info: Extramural Programs Dept, American College of Cardiology, 91 Old Georgetown Road, Bethesda, MD 20014

June 10-12

"Rehabilitation of the Brain-Injured Adult"

Place: Williamsburg, Virginia

Info: Ellen F. Walsh, School of Allied Health Professions, Box 233, MCV Station, Richmond, VA 23298, 804-231-9011

June 10-13

"Dermatology for Non-Dermatologists"

Place: Myrtle Beach, South Carolina

Fee: \$295

Credit: 14 hours, AAFP

Info: "Dermatology for Non-Dermatologists," Box 2987, Duke Medical Center, Durham, NC 27710, 919-684-2504

June 11-13

"Arrhythmias and Cardiac Ischemia: Diagnoses and Management"

Place: Virginia Beach, Virginia

Fee: \$245

Credit: 13 hours, Category I; 13 hours AAFP

Info: International Medical Education Corp., 64 Inverness Drive, East, Englewood, Colo. 80112, 800-525-8651

June 23-26

"Ninth Annual Arts and Sciences of Sports Medicine"

Place: Charlottesville, Virginia

Info: Frank C. McCue, III, M.D., Box 243, University of Virginia Medical Center, Charlottesville, VA 22908, 804-924-2083

July 7-10

"Cardiology 1982: A Comprehensive Review of the Latest Techniques and Developments in the Field of Cardiology for the Practicing Cardiologist/Internist"

Place: Knoxville, Tennessee

Info: Extramural Programs Dept., American College of Cardiology, 911 Old Georgetown Road, Bethesda, MD 20014

July 27-31

"Fifth Annual Symposium on Contemporary Clinical Neurology"

Place: Hilton Head Island, South Carolina

Info: Mrs. Joan Sullivan, Dept. of Neurology, Vanderbilt University School of Medicine, Nashville, TN 37212

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh, 27611, two months prior to the month in which they are to appear. A "Request for listing" form is available upon request.

News Notes

The Bowman Gray School of Medicine Wake Forest University

Research is under way at the Bowman Gray School of Medicine using ultrasound to determine what normal and abnormal carotid arteries look like in youngsters between the ages of 6 and 20.

The work, headed by Dr. Ward A. Riley Jr., research assistant professor of neurology, is supported by a three-year, \$210,000 grant from the National Heart, Lung and Blood Institute.

Riley and his colleagues are using ultrasound technology developed at Bowman Gray which has a sensitivity necessary for examining the arteries of children and for measuring the thickness of their artery walls.

Riley explains that baseline information about normal and abnormal arteries, especially in youngsters who have not yet developed the risk factors for atherosclerosis, will help hasten the time when people routinely and safely can be screened from the early decades of life for the presence of atherosclerosis.

Seven hundred children are expected to be examined before Riley's project ends.

One of the measurements Riley will be making is the expansion of the artery wall with each heart beat. Previous Bowman Gray research has shown that the carotid arteries of children under the age of 10 expand about 16% with each heart beat, and that the elasticity of the artery wall then begins to decline by about 3% each decade.

Dr. Daniel J. Fernandes, assistant professor of biochemistry at Bowman Gray, has received a \$100,000 grant to study the regulation of one particular enzyme in human colon cancer cells.

The enzyme, thymidylate synthetase, has been the target for anti-cancer drugs such as floxuridine, a popular drug for treating solid tumors.

Fernandes is trying to determine why colon cancer cells become resistant to the drug. He speculates that the resistance may be due to increased levels of the enzyme. Preliminary evidence indicates that in resis-

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- 450 patients studied
- Mild to moderate hypertensives
- Comparison of propranolol and reserpine for Step-2 antihypertensive therapy
- **Conclusion:** when added to a thiazide diuretic, reserpine was effective in a larger percentage of patients (88%) than was propranolol (81%)!

HDFFP Study²

- More than 10,000 patients studied
- Conducted at 14 centers over 5 years
- Proved that compliance with Step Care lowers death rate from all cardiovascular causes
- **Conclusion:** reserpine-thiazide regimens were preferred for Step-2 therapy, and were deemed effective, without significant adverse effects!

MRFIT Study³

- 6-year, 12,000-patient study, to be completed in 1982
- Assesses factors that may increase risk of cardiovascular disease
- Preferred Step-2 regimen: reserpine-thiazide
- **Full year's data:** reserpine is causing less depression than methyl dopa, diuretics, or placebo!

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Brief Summary of Prescribing Information (12) 10/27/78

For complete information consult Official Package Circular

WARNING

This fixed combination drug is not indicated for initial therapy of hypertension. Hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension is not static, but must be reevaluated as conditions in each patient warrant.

CONTRAINDICATIONS

Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy—Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia (especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy. Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhosis. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

ADVERSE REACTIONS

Hydroflumethiazide—Skin-rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation.

Reserpine—Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares.

USUAL DOSE

The usual adult dose of Salutensin is one tablet once or twice daily. If a smaller amount of thiazide diuretic is desired, Salutensin-Demi, one tablet once or twice daily can be given.

SUPPLIED

Bottles of 10 and 1000 scored tablets.

REFERENCES

1. Propranolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
2. Five-year findings of the hypertension detection and follow-up program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. Hypertension Detection and Follow-up Program Cooperative Group. *JAMA* 242:2562-2571, 1979.
3. Moser M, Kaplan NM, Sullivan JM, Paul O, in discussion: Perspectives on MRFIT: Can the interim data be applied to your practice...? An Interim Report on the Ongoing Multiple Risk Factor Intervention Trial: MRFIT. *New Perspectives on Hypertension* 2(1):10-19, February 1981.

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tant tumor cells, the enzyme levels are so high that not enough of floxuridine can get into the cancer cell to significantly inhibit the enzyme's activity.

Dr. Velma G. Watts has been appointed to the Bowman Gray faculty as director of the Office of Minority Affairs and instructor in medical education.

Before coming to Bowman Gray, she worked at the regional office of the North Carolina Department of Public Instruction in Greensboro. She also has worked as a staff development specialist for the North Carolina Advancement School and has taught in the Winston-Salem/Forsyth County School System.

In her new position, she will recruit minority students and develop support programs for those students.

Dr. Watts holds the B.S. and M.A. degrees from North Carolina A & T University, the M.E. degree from the University of North Carolina at Chapel Hill and the Ph.D. degree in educational administration from Duke University.

A Bowman Gray radiologist was the subject of a cover story in one of the nation's most widely circulated radiological magazines.

Dr. I. Meschan, professor of radiology and director of Bowman Gray's radiological continuing education, was featured on the cover and in a story in the *Journal of Applied Radiology*. He was chairman of the medical school's Department of Radiology for 22 years before giving up that post in 1977.

The magazine describes Meschan as "scholar, writer, researcher, teacher" and adds that he "has been making radiologic history for the past 30 years, from the publication of an *Atlas of Normal Radiographic Anatomy* to pioneering research on radio-nuclides."

It was the second time within the past year that "Applied Radiology" has featured a Bowman Gray radiologist. A previous cover story dealt with the accomplishments of Dr. Elias G. Theros, professor of radiology.

A textbook co-edited by a psychologist at Bowman Gray has been rated one of the "Ten Best Behavioral Books for 1981" by *Behavioral Medicine*, a national journal.

Dr. Laurence A. Bradley's book, *Medical Psychology: Contributions to Behavioral Medicine*, was chosen from about 300 books for the honor.

Bradley is an assistant professor of psychology and head of the Section on Medical Psychology at Bowman Gray.

His book, published last summer, covers assessment, treatment and prevention of medical problems such as hypertension, chronic pain, obesity and cancer.

Co-editor of the book is Dr. Charles K. Prokop of

the Department of Psychiatry at Texas Tech University Health Sciences Center.

Dr. Ernest T. Ahl Jr. has been appointed to the Bowman Gray faculty as assistant professor of pathology.

In his new position, he will serve as director of the immunoperoxidase laboratory at Baptist Hospital as well as having teaching and research responsibilities. His principal research interest is disorders of the immune system.

Bowman Gray's Department of Family and Community Medicine has opened a clinic for the elderly residents at Winston-Salem's Crystal Towers. The clinic, open two mornings a week, is staffed by a physician assistant who is the primary provider of care at the clinic.

Crystal Towers is a city-owned apartment building near the downtown business district. It has about 200 residents, most of whom are over the age of 60.

The clinic is financed in part by a three-year grant from the Kate B. Reynolds Health Care Trust to explore the use of physician extenders in providing health care to the aged in such places as long-term care facilities.

In addition to the physician assistant, the clinic involves the services of two doctors, a licensed practical nurse and a pharmacist.

Most of the medical services provided at the clinic since it opened the first of the year have involved managing chronic medical problems.

Dr. Glenn P. Gravlee, assistant professor of anesthesia, has been selected chairman of the Medical Liaison Committee of the Society of Cardiovascular Anesthesiologists. He has been appointed to the Board of Governors of the American Board of Cardiovascular Perfusion representing the Society of Cardiovascular Anesthesiologists.

Dr. Phillip M. Hutchins, professor of physiology, has been elected a member of the Life Science Advisory Committee of the National Aeronautics and Space Administration for the Space Lab Flight, scheduled for 1984. He is tentatively scheduled to have experiments flown on the first dedicated Life Science Mission (Space Lab 4) scheduled for 1985.

Dr. W. Keith O'Steen, professor and chairman of the Department of Anatomy, has been elected to a two-year term on the Council of the Association of Anatomy Chairmen.

Dr. George Podgorny, clinical associate professor

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of surgery (emergency medicine), has been elected to the Board of Directors of the Medic-Alert Foundation International.

Duke University Medical Center

A Duke University Medical Center plastic surgeon began using an argon laser in January to fade unsightly birthmarks, tattoos and "spider nevi." The \$25,000 laser was purchased by Duke's Department of Surgery and will be used by staff plastic surgeons.

"We can't completely obliterate these marks, but for most people we can make them significantly lighter," said Dr. Ronald Riefkohl, an assistant professor of plastic surgery. Riefkohl said about 70 percent of patients get "good to excellent results with the technique," which is done on an outpatient basis with localized anesthesia. He said about 30 percent of patients have lesions that are too deep to be faded by the treatment.

Usually each treatment session lasts about 30 to 45 minutes, depending on the size of the mark, the plastic surgeon said. The complication rate with treatment of marks situated below the collar bones is greater, he said, and the laser therapy works best removing marks on the face and hands.

"Each patient is given a test patch to see how well

their skin reacts to the laser, or whether they will scar," Riefkohl said. "Overall, about five percent of patients treated with the argon laser will have some scarring."

Dr. David C. Sabiston Jr., Duke University Medical Center's chairman of the Department of Surgery and James B. Duke Professor of Surgery, spoke on "Surgical Relief of Angina" at a Jan. 5 lecture.

The lecture was the fifteenth of the public relations "Health Night Out" series, free monthly programs on health topics.

Sabiston discussed the causes of coronary disease, its symptoms and what heart surgery is like. He reviewed the ways heart disease is diagnosed and outlined the criteria physicians frequently use to judge whether a person is a candidate for heart surgery.

"Heart surgery has become very safe and very reliable," Sabiston said. "In some cases it's clearly a life saver, and in nearly all cases it greatly improves the quality of life of the person with heart disease."

Sabiston, who is regarded internationally as an expert in thoracic surgery, told the lay audience that a change in lifestyle could help prevent coronary artery disease. He said cigarette smoking tops the list of risk factors.

"It's relatively uncommon to find a patient with severe atherosclerosis who is not a smoker," he said.

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Hundreds of Duke University and medical center staffers attended memorial services Jan. 6 in Duke Chapel for longtime Duke biochemist Dr. Philip Handler, who died Dec. 29. Handler retired recently as president of the National Academy of Sciences. He succumbed in a Boston hospital after a lengthy illness.

Handler was 64. He had resumed his position as James B. Duke Professor of Biochemistry after 12 years in Washington, D.C.

Duke President Terry Sanford said Handler was "an outstanding scientist, teacher, author, administrator and public servant who touched and improved the lives of all of us."

Dr. William G. Anlyan, vice-president for health affairs, said Handler was one of the key leaders at Duke University Medical Center who helped a young private medical school become an internationally respected institution.

"He had a worldwide reference point of view in health and science," Anlyan said.

Handler devoted much of his life as a scientist to investigations of such questions in biochemistry as the nature of the vitamin deficiency disease pellagra, the workings of enzymes and evolution of life from a single ancestor.

In the political arena, he worked to strengthen the role of scientists in shaping national policy.

A native of New York City, Handler received his B.S. from the College of the City of New York in 1936 and his Ph.D. from the University of Illinois in 1939. Immediately after finishing graduate work, he started his career at Duke as an instructor in nutrition and physiology.

He came to Duke University Medical Center when it was not yet a decade old, and thus is considered one of its founding fathers. In 1950, he became chairman of biochemistry, a position he held until 1969.

He topped his career as a consultant to presidents, committees and Congress with the presidency of the National Academy of Sciences, a post he held from 1969 to 1981.

Three Duke University professors were elected fellows of the American Association for the Advancement of Science at the association's annual meeting in Washington, D.C., in January.

Drs. William G. Anlyan, vice president for health affairs; Ewald W. Busse, associate provost and dean of medical and allied health education; and Hugh G. Robinson, professor of physics, are the professors who were honored.

The AAAS describes a fellow as "a member whose efforts on behalf of the advancement of science or its application are scientifically or socially distinguished."

Reduced reimbursements from state and federal governments have forced Duke University Hospital to intensify its efforts to reduce costs, the hospital's chief executive officer Andrew G. Wallace, M.D., announced in December.

"Duke Hospital treats large numbers of Medicare and Medicaid beneficiaries," Wallace said. "Together they make up 40 percent of all our patients, so government decisions to pay less than our actual costs for the services we provide have an enormous impact on our finances. We have no choice but to cut expenditures."

He said the cost reduction effort would not affect the scope and quality of patient care services, but said other expenditures would be cut "wherever possible."

Wallace said his principal concern is to protect existing services, employees and hospital rates.

"If we can't find savings large enough to offset the reductions in our reimbursements, we will have to consider cutting services to charity care patients, increasing the rates we charge private patients, and reducing our workforce," Wallace said. "None of us wants that."

Duke neurosurgeon Dr. Blaine S. Nashold has operated on more than 75 paraplegics with intractable pain using a new surgery technique known as "DREZ" Coagulation. All of the pain sufferers have gained long-term relief.

"With a fine electrode we kill the nerve where the pain originates in the spinal cord by coagulation," Nashold said. "We use a microscope to localize the damaged areas in the spinal cord for treatment."

Nashold said about 10 percent of all paraplegics have burning pain around the body at the point just above where they are paralyzed. Nashold developed the technique to help patients who he described as having unbearable pain.

"We're talking about patients whose doctors have exhausted all possible ways to deal with pain. Many of these patients become addicted to narcotics. I know of two paraplegics who committed suicide because the pain was so unbearable."

Because the internationally recognized neurosurgeon has shared the technique through lectures and clinical instruction, the DREZ coagulation surgery is offered in other major medical centers in the U.S. and abroad. Nashold recommends that surgery be done at medical centers that have pain clinics. At Duke, candidates for the surgery are evaluated and treated through the 10-year-old pain clinic.

"We use a large number of tests to eliminate patients who are experiencing pain because they are depressed," he said. "We are continuing research to refine the DREZ."

When someone is poisoned, minutes count.

"Whether it's a three-year-old who has swallowed lye or an adult who has taken the wrong medicine in the middle of the night, it's crucial to find out the proper treatment fast," said Dr. Shirley Osterhout, director of Duke's Poison Control Center.

To make it easier to get information about poison treatment, Osterhout said Duke's Poison Control

Center now has a toll-free telephone number — 1-800-672-1697.

"Make note of that number," Osterhout said. "It could save someone's life."

The physician said most poisonings are recognized before actual symptoms appear. "That's why we provide immediate emergency hospital visits," she said.

Osterhout said 82 percent of all calls to Duke's Poison Control Center are from outside Durham County. The center receives more than 5,000 calls a year, she said, and the majority of those calls concern children under the age of 4.

"We offer help 24 hours a day, seven days a week," said Osterhout, an assistant professor of pediatrics.

Residents of the Durham area can reach the Poison Control Center by calling the switchboard at Duke University Hospital, 684-8111, and requesting the Poison Control or beeper ID #7410.

Sandra H. Bigner, assistant professor in the Department of Pathology, received a \$42,681 award from the National Institute of Neurological and Communicative Disorders and Stroke. She is studying the cytopathology and cytogenetics of CNS tumors.

Vytautas A. Pakinis, in the Department of Ophthalmology, received a national research service award of \$22,040 from the National Eye Institute.

Richard S. Metzgar, professor in the division of immunology, was awarded a \$95,410 grant from the National Cancer Institute for research in human leukemia.

Page A. Anderson, associate professor in the division of pediatric cardiology and assistant professor of physiology, received a development award of \$38,416 from the National Heart, Lung and Blood Institute. Anderson is studying "Developing Myocardium: Biophysical Aspects."

R. Sanders Williams, assistant professor of cardiology and medical director of DUPAC, received a new investigator research award of \$26,163 for the National Heart, Lung and Blood Institute. Williams is studying membrane receptors and physical conditioning.

Hilliard F. Seigler, professor in the Department of Surgery and associate professor of microbiology and immunology, received a \$41,882 grant from the National Cancer Institute. He is studying the immunodiagnosis of melanoma.

Stuart F. Robinson, assistant professor in the division of gastroenterology, received a \$45,985 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. Robinson is studying elevated biliary pressures on hepatic lipids.

D. Bernard Amos, professor of experimental surgery and immunology, was awarded a \$258,154 re-

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Cyclapen®-W produces a significantly lower incidence of the most common side effect, diarrhea.²

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1. Ginsburg CM, McCracken GH Jr, Zweighaft TC, Clahsen JC: Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother* 19:1086-1088 (June) 1981.

2. Multicenter trials. Data to be published.

See important information on page after next.

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Clinical efficacy may not always correlate with blood levels.

†Due to susceptible organisms.

3. Data on file. Wyeth Laboratories.

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Indications

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 Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*
 Acute exacerbation of chronic bronchitis caused by *H. influenzae**

*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings Cyclacillin should only be prescribed for the indications listed herein.

Cyclacillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with cephalexin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclacillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclacillin is given to a nursing woman.

Adverse Reactions Oral cyclacillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclacillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See WARNINGS) Other less frequent adverse reactions which may occur and are reported with other penicillins are anemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclacillin is not indicated in children under 2 months of age.

Patients with Renal Failure Cyclacillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see DOSAGE AND ADMINISTRATION in package insert).

Dosage (Give in equally spaced doses)

INFECTION	ADULTS	CHILDREN*
Respiratory Tract		
Tonsillitis & Pharyngitis	250 mg q.i.d.	body weight < 20 kg (44 lbs) 125 mg q.i.d. body weight > 20 kg (44 lbs) 250 mg q.i.d.
Branchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day† q.i.d.
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day† q.i.d.
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults.

†depending on severity

search grant from the National Institute of General Medical Sciences. His project is "The Immunogenetics of Man, Mice and Viruses."

Gerald S. Lazarus, J. Lamar Callaway Professor and chief of the division of dermatology, was awarded a \$95,787 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study "Activation of Proteinases by Pemphigus Antibody."

James D. Crapo, associate professor and chief of the division of allergy and respiratory diseases, was awarded a \$46,769 research grant from the National Heart, Lung and Blood Institute. The title of his study is "Oxygen Induced Injury to the Pulmonary Endothelium."

The Eye Center has been awarded a \$12,000 grant from Research to Prevent Blindness (RPB), according to Dr. Robert Machemer, chairman of the Department of Ophthalmology. Duke has received \$97,000 over 16 years from RPB to support vision research, in addition to special RPB awards given to individual scientists.

Raymond E. Ideker, assistant professor of pathology and medicine, received a \$93,312 grant from the National Heart, Lung and Blood Institute to study "Cardiac Mapping of Ventricular Fibrillation."

Stephen H. Gehlbach, associate professor in the family medicine program, received a research grant of \$58,197 from the National Center for Health Services Research — OASH to study ways of improving drug prescribing in family practice.

Richard Whorton, assistant professor in the Department of Pharmacology, received a research grant award of \$29,583 from the National Heart, Lung and Blood Institute for his work on "Mechanisms of Prostaglandin Mediated Renin Release."

John W. Regan, in the division of cardiology, received an \$18,380 national research service award from the National Heart, Lung and Blood Institute to study hypertension.

Harold R. Silberman, professor of hematology and medical oncology, received a \$143,566 grant from the National Cancer Institute for cooperative studies in cancer therapy.

Mary C. Rose, assistant medical research professor in the Department of Biochemistry, received a \$38,764 grant from the National Heart, Lung and Blood Institute to study bronchial secretions.

Darell D. Bigner, professor in the Department of Pathology, was awarded a \$67,097 research grant from the National Cancer Institute to study the etiology, immunology and biology of brain tumors.

Edward L. Pritchett, assistant professor in the division of cardiology, was awarded a \$71,830 grant from the National Heart, Lung and Blood Institute to study the mechanism of spontaneous tachycardia.

Gerald M. Rosen, associate professor of pharmacology, was awarded a \$62,215 research grant from the National Institute of General Medical Sciences. Rosen is studying post traumatic fatty acid metabolism and cellular injury.

Paul G. Killenberg, associate professor in the divi-

sion of gastroenterology, was awarded a \$74,951 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. Killenberg is studying the enzymatic basis of bile acid sulfation.

John W. Gutknecht, professor of physiology at the Duke University Marine Laboratory, received a research grant of \$31,067 from the National Institute of Environmental Health Sciences to study heavy metal transport and effects on membranes.

Deborah Bender, associate in the Department of Community and Occupational Medicine, received a \$25,000 grant from the Public Welfare Foundation, Inc. to support the Andean Rural Health Project.

East Carolina University School of Medicine

The School of Medicine's Health Science Library moved into the school's Brody Medical Science Building in December. The library is the first unit to occupy the new \$26 million facility which is scheduled for full occupancy this summer.

The library's 30 fulltime staff plus additional temporary employees worked throughout the Christmas holidays unpacking an estimated 5,000 boxes containing 86,000 volumes and 11,000 reels of microfilm.

This is the fourth time the library has moved since it was established in 1969. It was originally located in a seminar room in Joyner Library and moved from there to the east cafeteria building and then to the Science Complex. In 1972 the collection moved to the Belk Building.

The new two-floor, 32,000-square-foot facility offers convenient access to the library's full collection, comfortable reading areas, and individual and group study rooms. Circulation, reference, current journal areas and computer search rooms are located on the first floor.

Audiovisual materials and stacks are on the second floor, which also includes a history of medicine room.

The Health Science Library serves students in the university's medicine, nursing and allied health programs and is a regional resource for physicians and health professionals in Eastern North Carolina.

The Department of Pharmacology was awarded a Wellcome Visiting Professorship in the Basic Medical Sciences from the Federation of American Societies for Experimental Biology.

Dr. David J. Greenblatt, Tufts-New England Medical Center Hospital, was chosen as visiting professor for the lecture series designed to stimulate interest in basic and applied pharmacology. While at the medical school, Greenblatt presented public lectures entitled "Clinical Pharmacology of Valium and Other Benzodiazepines," "Drug Dispositions in Old Age," "Sedatives and Hypnotics in Family Practice: Use and Misuse," "Understanding Pharmacokinetics" and "Interpreting Serum Concentration of Drugs."

Greenblatt is professor of psychiatry and associate

professor of medicine at Tufts University School of Medicine and Tufts-New England Medical Center Hospital in Boston. He also serves as the chief of the Division of Clinical Pharmacology.

Dr. James G. Jones, professor and chairman, Department of Family Medicine, has been appointed to the Society of Teachers of Family Medicine's International Family Medicine Education Committee.

Dr. Robert P. Dillard, assistant professor of pediatrics, was elected vice-chairman of the Professional Advisory Committee for the Coastal Plains' Chapter of the March of Dimes. Dillard, in collaboration with Dr. Melvin S. Swanson, associate director for educational evaluation, also has received a \$2,000 grant from Mead Johnson and Company for "Development of a Microcomputer Based Information Retrieval System for Well-Baby Care."

An article written by Dr. John C. Yeager, assistant professor of physiology, and Marvin Whitehurst, physiology research technician, appeared in the January issue of the magazine *Life Sciences*. The article is entitled "Verapamil Prevents Isoproterenol-induced Cardiac Failure in the Rat."

Dr. Dennis R. Sinar, associate professor of medicine, has co-authored an article entitled "Migrating Action Potential Complex Activity in Rabbit Ileal Loops Is Produced by the B-subunit of Cholera Enterotoxin." The article appeared in the January issue of the *American Journal of Physiology*.

Sinar also attended the recent meeting of the Southern Section of the American Federation for Clinical Research. During the meeting, he presented a paper entitled "Dissociation of Myoelectric Activity and Fluid Output in Ricin-damaged Small Intestine."

Several faculty members collaborated on a paper appearing in the November issue of *Surgery*. The paper is "Prophylactic Cefazolin in Gastric Bypass Surgery" and collaborators include: Dr. Walter J. Pories, professor and chairman of the Department of Surgery; Dr. Byron T. Burlingham, professor and chairman of the Department of Microbiology; Dr. Robert S. Fulghum, associate professor of microbiology; and Diane Meelhiem, surgical family nurse practitioner.

Dr. R. Stephen Porter, Department of Family Medicine, presented medical grand rounds at the Kingsbrook Jewish Medical Center in Brooklyn. Porter's grand rounds topic was "Individualizing Drug Therapy: Practical Application of Therapeutic Drug Monitoring."



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On Balance...

RU-VERT[®]

Each Tablet Contains:

Pentylenetetrazol.....	25.0 mg
Pheniramine maleate.....	12.5 mg
Nicotinic acid.....	50.0 mg

Clinically proven actions

- Antihistaminic
- Cerebral stimulant
- Vasodilator

Few side effects

- Vasodilation occasionally causes facial flushing which can be minimized by recommending that Ru-Vert[®] be taken following meals or with food.

Dosage

- One or two tablets three times a day

Please see next page for a summary of prescribing information

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In Vertigo On Balance... RU-VERT®

See following prescribing information.

DESCRIPTION: Each tablet contains the following active ingredients:

Pentylene-tetrazol	25.0 mg
Pheniramine maleate	12.5 mg
Nicotinic acid	50.0 mg

INDICATIONS: Ru-Vert is indicated as an adjunct therapy in the symptomatic treatment of acute or chronic vertigo.

CONTRAINDICATIONS: Convulsive disorders or known history of sensitivity to any of the listed active ingredients. Because of the vasodilating action of nicotinic acid, Ru-Vert should not be used in patients with hypotension.

WARNINGS: The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

PRECAUTIONS: Although there are no absolute contraindications to pentylene-tetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of Ru-Vert who have heart disease. While pentylene-tetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

Pheniramine maleate, like other antihistamines, may produce sedative side effects in certain patients.

Transient vasodilatation due to rapid absorption of nicotinic acid may produce facial flushing and a sensation of warmth. These effects may be ameliorated by recommending that Ru-Vert be taken following meals or with food.

ADVERSE REACTIONS: Pentylene-tetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylene-tetrazol.

DRUG ABUSE: Drug dependence has not been reported with Ru-Vert.

OVERDOSAGE: Signs and symptoms of acute overdose may be due primarily from overstimulation of the central nervous system and from excessive vasodilatation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage.

Intensive care must be provided to maintain adequate circulation and respiratory exchange.

DOSEAGE AND ADMINISTRATION: The recommended dosage of Ru-Vert for vertigo or motion sickness is 1 or 2 tablets three times a day with meals or light snacks.

This drug is not for use in children under 12 years of age.

HOW SUPPLIED:

Bottles of 100 tablets

Bottles of 300 tablets

Federal law prohibits dispensing without prescription.

NOC 0524-0060-01

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Pioneers in medicine for the family

Dr. Sudesh Kataria, assistant professor of pediatrics, has received \$1,000 from Mead Johnson Company for a project entitled "Infant Feeding: Practices and Belief." The grant is part of an American Pediatric Association collaborative study among the medical schools at East Carolina, Yale University and Vanderbilt.

University of N.C. School of Medicine & N.C. Memorial Hospital

If all goes according to plan, cancer researchers at the School of Medicine will move into the new \$8.4 million Lineberger Cancer Research Center building by June 1984.

Construction began last month on the 35,000 square foot, three-story building. The new cancer research building will house the main administrative offices, a library and conference room, laboratory and office space for faculty investigators and containment facilities for chemical carcinogenesis, recombinant DNA and virus research. There also will be specialized rooms for existing tissue culture and electron microscopy core facilities.

Construction is being funded by a \$1.37 million grant from the National Cancer Institute, \$3.20 million from institutional funds and \$3.83 million raised from private donations.

Seven School of Medicine faculty members have received Junior Faculty Development awards for 1982.

Five were recipients of Institutional Development Foundation awards. They are Drs. Philip J. Bassford, bacteriology and immunology; Robert A. Eisenberg, medicine; Stephen A. Grupp, surgery; William B. Guilford, radiology; and James F. Howard Jr., neurology and medicine.

Recipients of R. J. Reynolds Industries award are Drs. Kathleen K. Sulik, anatomy, and Thomas W. Traut, biochemistry and nutrition.

All the recipients are assistant professors in the departments noted.

University-wide, 31 Junior Faculty Development awards were given, equivalent to a 55% increase over the number of awards made previously.

Dr. Barbara Hulka, professor of epidemiology in the School of Public Health, has been appointed head of the epidemiology program in the Cancer Research Center in the medical school.

"The center is fortunate to have a nationally distinguished epidemiologist, Dr. Hulka, as the head of its cancer epidemiology program," said center director Dr. Joseph S. Pagano, "particularly at a time when the epidemiology of cancer is being recognized as of increasing importance."

Hulka will coordinate interdisciplinary research projects between the School of Public Health and the Cancer Research Center that will focus on the analysis of cancer cause, prevention and treatment. Under her leadership, a three-year study of endometrial cancer involving a number of faculty from both schools has recently been completed.

She recently was appointed to the prestigious Board of Scientific Counselors at the National Cancer Institute's Division of Resources, Centers and Community Activities. The committee meets three times a year to set guidelines for cancer centers, educational programs and research. Hulka also is chairperson of the Epidemiology and Disease Control Study Section, the only epidemiology grants review section of the divisions of the National Institutes of Health.

Hulka received a B.A. from Radcliffe College in Cambridge, Mass., an M.S. from the Juilliard School of Music in New York, an M.D. from the Columbia College of Physicians and Surgeons in New York in 1959, and an M.P.H. from the Columbia School of Public Health in 1961.

Drs. Colin D. Hall, associate professor of neurology and Patricia Porter, associate professor of medical allied health professions presented a workshop "School Intervention in the Neuromuscularly Handicapped Child," to the Association for the Severely Handicapped, Oct. 17 in New York City.

Dr. Jeffrey Andresen, associate professor of psychiatry, was an invited speaker at the University of Vermont College of Medicine Oct. 6-7 in Burlington, Vermont.

Dr. James H. Scatliff, professor and chairman of the Department of Radiology, was a member of the guest faculty at the Eighth Annual Course on Computed Tomography, Rush-Presbyterian, St. Luke's Medical Center. Dr. Scatliff presented talks on CT in the diagnosis of hemorrhagic stroke and CT in the diagnosis of arachnoid cysts in children.

Dr. Walter B. Greene, assistant professor of surgery and pediatrics, presented a paper titled, "The Use of a Modified Isokinetic Strengthening Program in Patients with Hemophilia" at the annual meeting of the North Carolina Orthopaedic Association in Pinehurst on Oct. 9. The paper was co-authored by

Elizabeth Mostrom of the physical therapy department.

Dr. Edward J. Shahady, professor of family medicine, attended the third international workshop on the family, sponsored by the Universidad Nacional Autonoma de Mexico City. He gave four presentations: "The Training of the General/Family Physician," "The Formation of General/Family Medicine Faculty," "Utilization of General/Family Faculty in the Post Graduate," and "The Role of the First Contact Centers in the Formation of General/Family Physician."

Dr. William B. Wood, associate professor of medicine, director of medical alumni affairs and continuing medical education, was elected vice president of the North Carolina Society of Internal Medicine at the organization's annual meeting in November.

Dr. James W. Lea, associate professor of family medicine, recently discussed maternal, child and family health training projects with health officials from Sudan, Nigeria and the Ivory Coast.

Two members of the Department of Medicine have been elected to membership in the Southern Society for Clinical Investigation. Dr. H. Shelton Earp, associate professor, and David R. Clemmons, assistant professor, were elected at the organization's annual meeting Jan. 14-16 in New Orleans.

Dr. William L. Isley, a fellow in the Department of Medicine's division of endocrinology, has received the Burroughs-Wellcome Young Investigator Award for his research paper entitled, "The Nutritional Regulation of Serum Somaomedin-C Concentrations in Humans." The paper was co-authored by Dr. Louis E. Underwood, professor of pediatrics and Dr. David R. Clemmons, assistant professor of medicine, and was presented at the annual meeting of the Southern Society for Clinical Investigation. The award is given annually to a fellow or trainee for outstanding research.

Dr. Ali Shirkhoda, assistant professor of radiology, gave a lecture at George Washington University Hospital in Washington, D.C., Jan. 5, entitled, "Pitfalls in Abdominal CT Diagnosis."

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TEXAS — IMMEDIATE OPENINGS in Dallas for Ophthalmologist, ENT, and Perinatologist; General Practitioners needed in Austin. Also excellent openings for Family Practitioners, Internists, Orthopaedic Surgeons, OB/GYN, Peds, and Neurologist in cities with 5,000-65,000 population near metroplex areas. Write Texas Doctors Group, Box 177, Austin, Texas 78767, (512) 476-7129.

PSYCHIATRIC TREATMENT FACILITY FOR SALE. 35 beds, 7½ acres in lovely setting in Shenandoah Valley near Waynesboro, Virginia. Owner retiring. Financing. Call for brochure. 703/942-5101.

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SURGEON — Assistant Professor of Surgery in a University teaching hospital; Board certified or qualified in general surgery; demonstrated competitive in teaching and general, trauma, transplantation and vascular surgery. Academic and scholarly productivity required for promotion. Keen interest in attracting outstanding woman and/or minority physician. Applicants should submit complete curriculum vitae to: Dr. George Johnson, Jr., Department of Surgery, 210 Clinical Sciences Building 229H, University of North Carolina, Chapel Hill, North Carolina 27514. **THE UNIVERSITY OF NORTH CAROLINA IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.**

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North Carolina MEDICAL JOURNAL

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May 1982, Vol. 43, No. 5

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July 2-4, Wrightsville Beach

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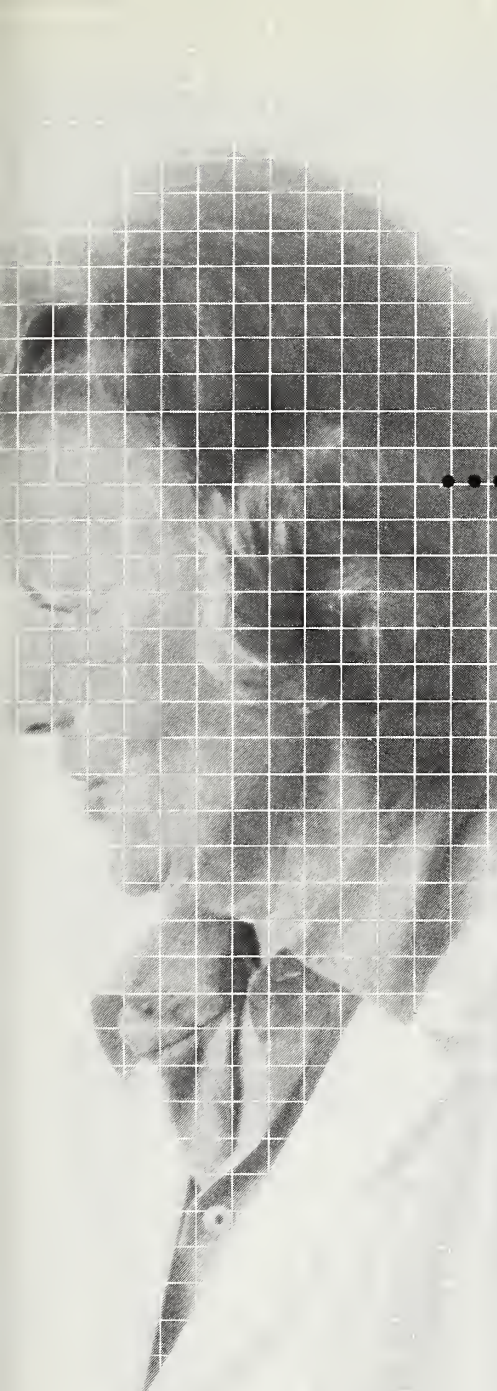
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The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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North Carolina MEDICAL JOURNAL

May 1982, Vol. 43, No. 5

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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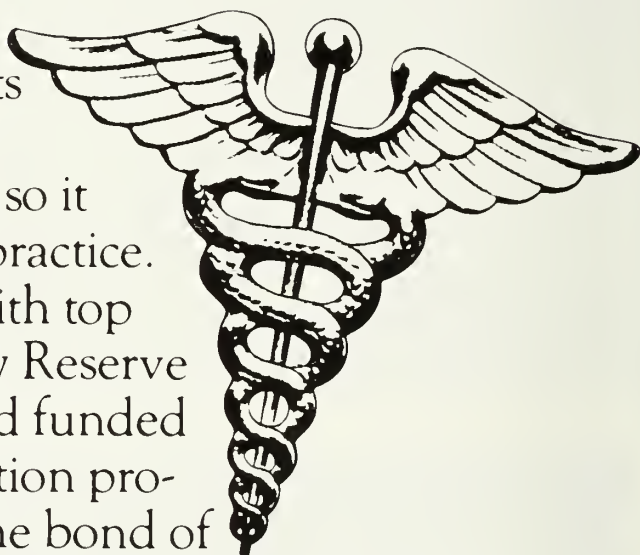
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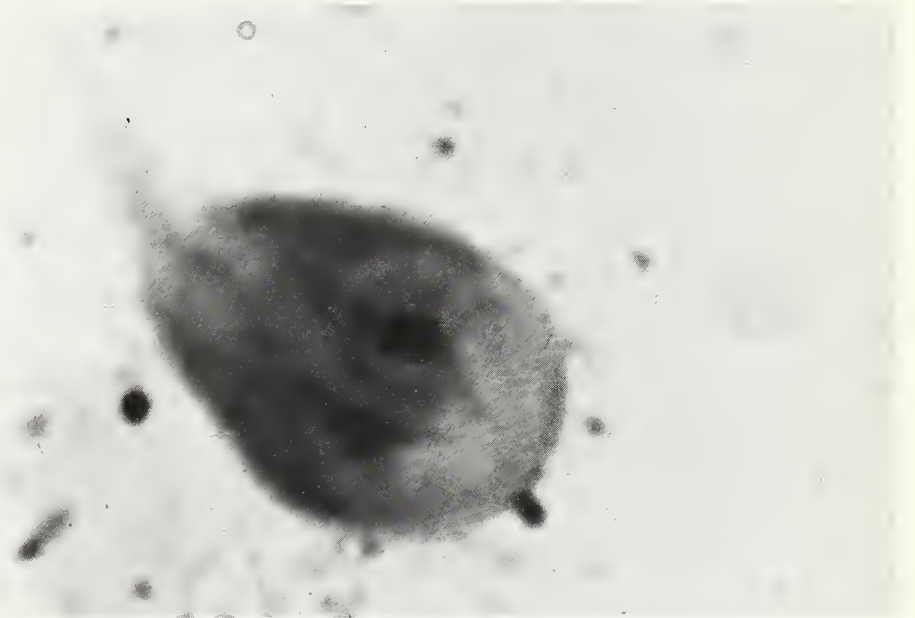
Those parasites that live primarily in the duodenum or bile ducts often are more readily seen in the duodenal contents than in the stool. These include *Giardia lamblia* (motile trophozoites), *Strongyloides stercoralis* (larvae and/or eggs in advanced stages of development), *Clonorchis sinensis* (eggs), *Fasciola hepatica* (eggs), *Trichostrongylus orientalis* (eggs), and *Isospora* (coccidia).

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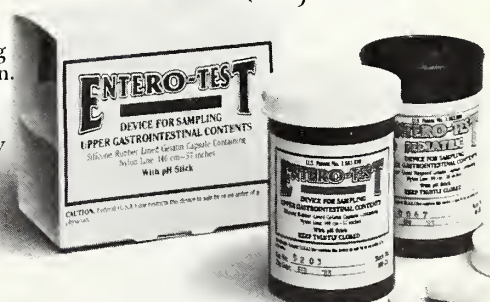
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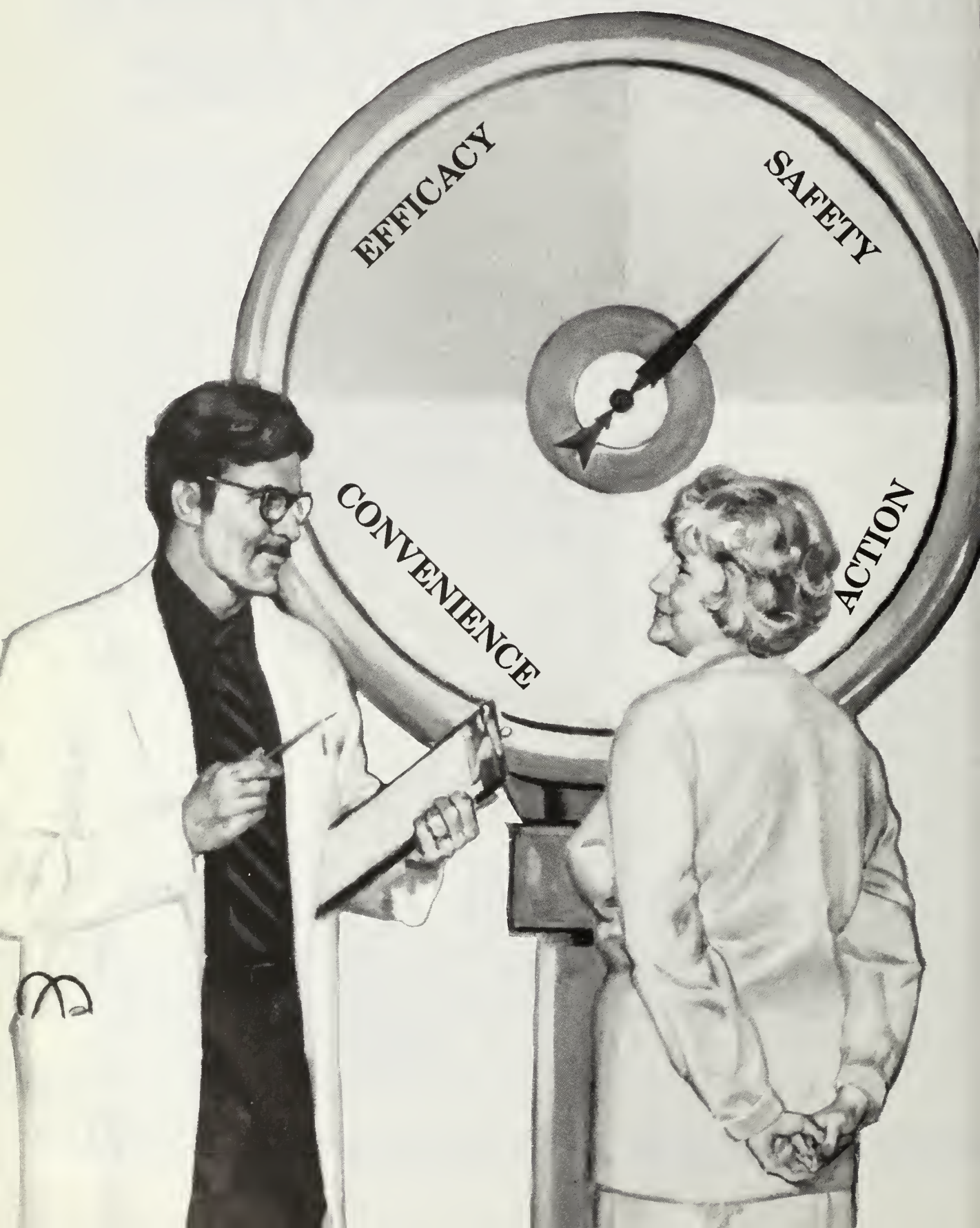
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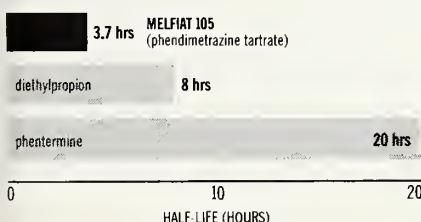
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WARNINGS: Tolerance to the anorectic effect usually develops within a few weeks. When this occurs, the recommended dose should be discontinued. Phendimetrazine tartrate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly.

Drug Dependence: Phendimetrazine tartrate is related chemically and pharmacologically to the amphetamines. Amphetamines and related stimulant drugs have been extensively abused, and the possibility of abuse of phendimetrazine tartrate should be kept in mind when evaluating the desirability of including a drug as part of a weight-reduction program. Abuse of amphetamines and related drugs may be associated with intense psychological dependence and severe social dysfunction. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high-dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG, manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxication is psychosis, often clinically indistinguishable from schizophrenia.

USAGE IN PREGNANCY: The safety of phendimetrazine tartrate in pregnancy and lactation has not been established. Therefore, phendimetrazine tartrate should not be taken by women who are or may become pregnant.

USAGE IN CHILDREN: Phendimetrazine tartrate is not recommended for use in children under 12 years of age.

PRECAUTION: Caution is to be exercised in prescribing phendimetrazine tartrate for patients with even mild hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of phendimetrazine tartrate and the concomitant dietary regimen. Phendimetrazine tartrate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage.

ADVERSE REACTIONS: Cardiovascular: Palpitation, tachycardia, elevation of blood pressure.

Central Nervous System: Overstimulation, restlessness, dizziness, insomnia, euphoria, dysphoria, tremor, headache; rarely psychotic episodes at recommended doses.

Gastrointestinal: Dryness of the mouth, unpleasant taste, diarrhea, constipation, other gastrointestinal disturbances.

Allergic: Urticaria.

Endocrine: Impotence, changes in libido.

OVERDOSAGE: Manifestations of acute overdosage with phendimetrazine tartrate include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states.

Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Fatal poisoning usually terminates in convulsions and coma. Management of acute phendimetrazine tartrate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Acidification of the urine increases phendimetrazine tartrate excretion. Intravenous phentolamine (Regitine) has been suggested for possible acute, severe hypertension, if this complicates phendimetrazine tartrate overdosage.

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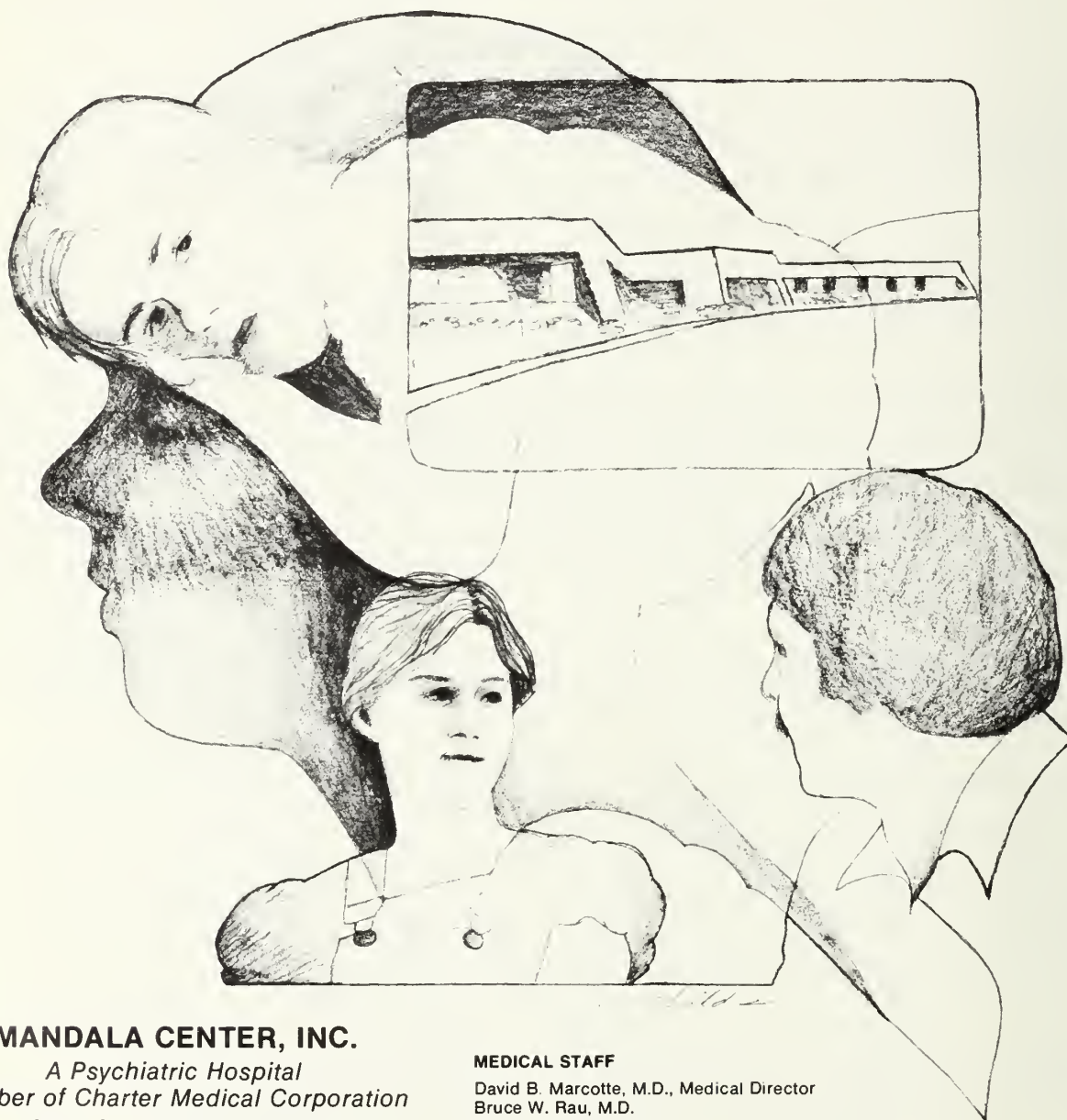
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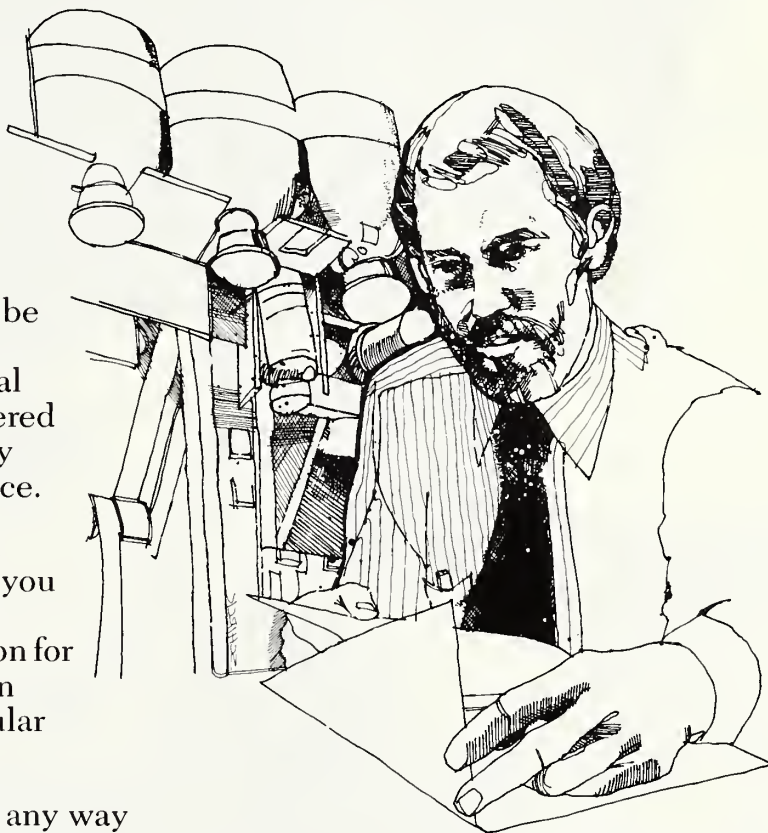
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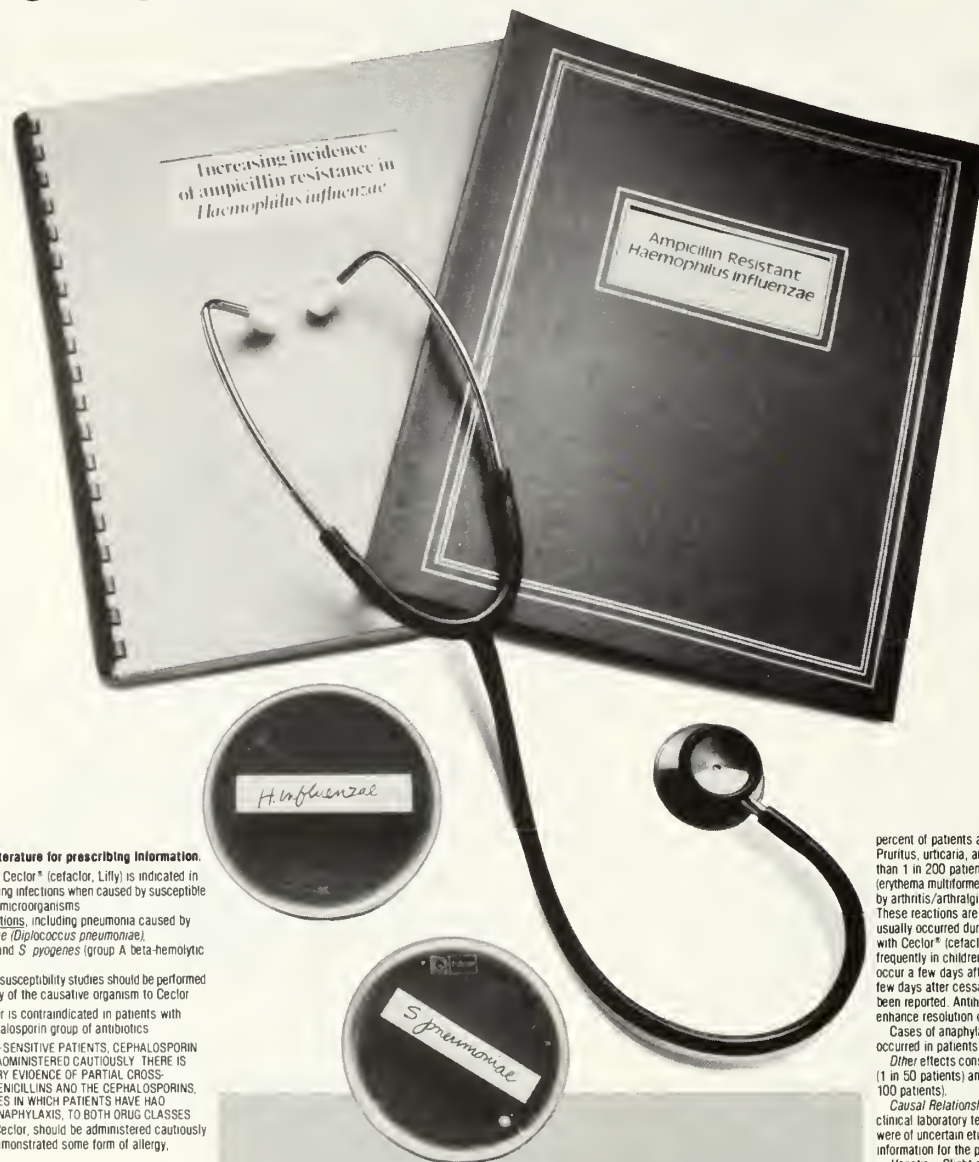
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Brief Summary

Consult the package literature for prescribing information.

Indications and Usage: Cefclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

Contraindication: Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coomb testing of newborns whose mothers have received cephalosporins before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with ClinTest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Usage in Pregnancy: Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in fetuses given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy: Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefaclor therapy are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (in 90).

As with other broad-spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been reported in conjunction with therapy with Cefclor.

Hypersensitivity reactions have been reported in about 1.5

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cefclor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.⁷

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percent of patients and include morbilliform eruptions (1 in 100), Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor® (cefaclor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). (1102281R)

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.⁸

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

References

- 1 Antimicrob Agents Chemother, 8:91, 1975
- 2 Antimicrob Agents Chemother, 11:470, 1977
- 3 Antimicrob Agents Chemother, 13:584, 1978
- 4 Antimicrob Agents Chemother, 12:490, 1977
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- 6 Antimicrob Agents Chemother, 13:861, 1978
- 7 Data on file, Eli Lilly and Company
- 8 Principles and Practice of Infectious Diseases (edited by G.L. Mandell, R.G. Douglas, Jr., and J.E. Bennett), p. 487. New York: John Wiley & Sons, 1979



Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285
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DESCRIPTION VERMOX (mebendazole) is methyl 5-benzoylbenzimidazole-2-carbamate.

ACTIONS VERMOX exerts its anthelmintic effect by blocking glucose uptake by the susceptible helminths, thereby depleting the energy level until it becomes inadequate for survival. In man, approximately 2% of administered mebendazole is excreted in urine as unchanged drug or a primary metabolite. Following administration of 100 mg of mebendazole twice daily for three consecutive days, plasma levels of mebendazole and its primary metabolite, the 2-amine, never exceeded 0.03 µg/ml and 0.09 µg/ml, respectively.

INDICATIONS VERMOX is indicated for the treatment of *Trichuris trichiura* (whipworm), *Enterobius vermicularis* (pinworm), *Ascaris lumbricoides* (common roundworm), *Ancylostoma duodenale* (common hookworm), *Necator americanus* (American hookworm) in single or mixed infections. Efficacy varies as a function of such factors as pre-existing diarrhea and gastrointestinal transit time, degree of infection and helminth strains. Efficacy rates derived from various studies are shown in the table below:

	Whipworm	Common Roundworm	Hookworm	Pinworm
cure rates				
mean	68%	98%	96%	95%
(range)	(61-75%)	(91-100%)	—	(90-100%)
egg reduction				
mean	93%	99.7%	99.9%	—
(range)	(70-99%)	(99.5%-100%)	—	—

CONTRAINDICATIONS VERMOX is contraindicated in pregnant women (see Pregnancy Precautions) and in persons who have shown hypersensitivity to the drug.

PRECAUTIONS **PREGNANCY:** VERMOX has shown embryotoxic and teratogenic activity in pregnant rats at single oral doses as low as 10 mg/kg. Since VERMOX may have a risk of producing fetal damage if administered during pregnancy, it is contraindicated in pregnant women.

PEDIATRIC USE: The drug has not been extensively studied in children under two years; therefore, in the treatment of children under two years the relative benefit/risk should be considered.

ADVERSE REACTIONS Transient symptoms of abdominal pain and diarrhea have occurred in cases of massive infection and expulsion of worms.

DOSAGE AND ADMINISTRATION The same dosage schedule applies to children and adults. The tablet may be chewed, swallowed or crushed and mixed with food. For the control of pinworm (enterobiasis), a single tablet is administered orally, one time. For the control of common roundworm (ascariasis), whipworm (trichuriasis), and hookworm infection, one tablet of VERMOX is administered, orally, morning and evening, on three consecutive days. If the patient is not cured three weeks after treatment, a second course of treatment is advised. No special procedures, such as fasting or purging, are required.

HOW SUPPLIED VERMOX is available as chewable tablets, each containing 100 mg of mebendazole, and is supplied in boxes of twelve tablets. VERMOX (mebendazole) is an original product of Janssen Pharmaceutica, Belgium.

US Patent 3,657,267
December 1979

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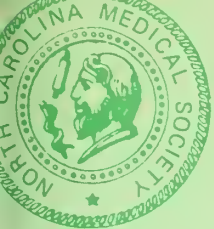
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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 12

MAY 1982

Dear Colleagues:

Another Annual Meeting is over and another busy year has drawn to a close. Fatigue from long hours of deliberation and scientific programs (maybe, a little libation?) was demonstrated clearly as 700 bedraggled physicians departed Pinehurst on Sunday.

A great deal was accomplished--as painstaking and tedious as the democratic process may be. Because of Federal Trade Commission complications, the North Carolina Medical Society charge to its Blue Shield Committee has been changed to eliminate adjudication of fees. A resolution that this committee be replaced by a new Committee on Medical Diagnoses and Management was referred back to the Executive Council for further study.

A resolution which would make Past-Presidents ineligible for service as a member of the Committee on Nominations was defeated. However, in an effort to give the membership more participation in the election of the Society's leadership, Davidson County's amended Resolution 17 was adopted. This resolution provides for publication of the nominated slate of officers at least 60 days prior to the Annual May Meeting of the House of Delegates. This action will allow County Societies to "consider the nominations and instruct their delegates prior to the election in the House of Delegates".

After lengthy discussion concerning the North Carolina Medical Journal, the report of the ad hoc Committee on its evaluation was approved. The report stated that the Journal has improved and should be continued. Within twelve months, we expect to have a more efficient Department of Communications with a professional director. The Journal will then be in the Department of Communications and will be re-evaluated with a report to the 1984 House of Delegates.

The 1982 Budget, proposed by the Committee on Finance, was approved and with it the proposed dues increase. The Executive Council was "authorized to proceed, in its discretion, with the construction of one or two additional floors to the existing headquarters building" and to acquire additional land for parking, if necessary. The Executive Council was also "authorized to use, in its discretion, the tenancy in common arrangement for the addition to the headquarters building.

Pitt County's Resolution 5 addresses their concern that much of the quality of patient care rendered in mental health community programs is deficient and substandard. They question the amount of time devoted by the medical or clinical director to treatment of patients, the rate of turnover of the qualified mental health professionals, the cost of an hour of therapy and independent, valid audits of each local program. On April 8, 1982, a guest article in the News and Observer by Richard H. Williams, Ph.D., a consultant to the National Institute of Mental Health, addressed these same concerns. Pitt County's resolution was referred to the Executive Council for further study and evaluation. The Executive Council will report the findings of this study to the 1983 House of Delegates. In like manner, the House adopted amended Report E concerning proper psychiatric care of prisoners suffering from psychiatric illness during their

incarceration,, as well as follow-up care upon their release from prison. Appropriate State Agencies are requested to provide adequate resources and to develop methods of delivering services including care management.

Attached to the previous PRESIDENT'S NEWSLETTER were the four reports generated by the ad hoc Committee to Consider a Statewide Medicaid Reimbursement Fee Schedule for Physicians. Three of these reports (A, B, and D) concerned the importance of private physician participation in the Medicaid Program, recommendation for reimbursement and cost containment. All three reports were adopted by the House. Report C was a description of the Michigan "Physician Primary Sponsor Plan," a gate-keeper program for Medicaid. A guest of the Division of Medical Assistance of the Department of Human Resources, Ms. Sherry Wellman, author of the Michigan Plan testified before the Reference Committee to discuss it and to respond to questions. Report C was filed as information by the House. We are indebted to Secretary Sarah Morrow and Medicaid Director Barbara D. Matula for their efforts to keep our membership informed on matters pertaining to the Medicaid Program.


Report K, generated by the ad hoc Committee on North Carolina's Right to Natural Death Statutes, stressed the optional nature of the procedure for entry of a 'no code' order. It was amended to further state: "The procedure is entirely optional and makes nothing that was legal before its enactment illegal, but rather provides an alternative that maybe followed in order to minimize liability exposure for situations involving withholding or discontinuing life supports including 'no code' situations." The Society is to make every effort to communicate the optional nature of the act to hospital administrators, nursing groups and other health professionals.

Many County Societies submitted resolutions concerning drunken driving and recognition of alcoholism as a disease. The House adopted a substitute resolution in lieu of the several motions submitted. The substitute motion urges the North Carolina Legislature to recognize alcoholism as a disease and evaluate those drivers arrested for DUI for appropriate treatment. The Legislature and the State Judiciary are urged to "take whatever measures necessary to remove the drunken driver from our highways and protect our citizens".

I have had a marvelous time being your President. I have many new friends--and--I hope very few enemies. The warm satisfaction of having you choose me as your President will stay with me for the rest of my years! For that I shall, forever be grateful! I know that each of you will give our new President, Marshall S. Redding, the same wonderful cooperation and friendship shown me. And now ---

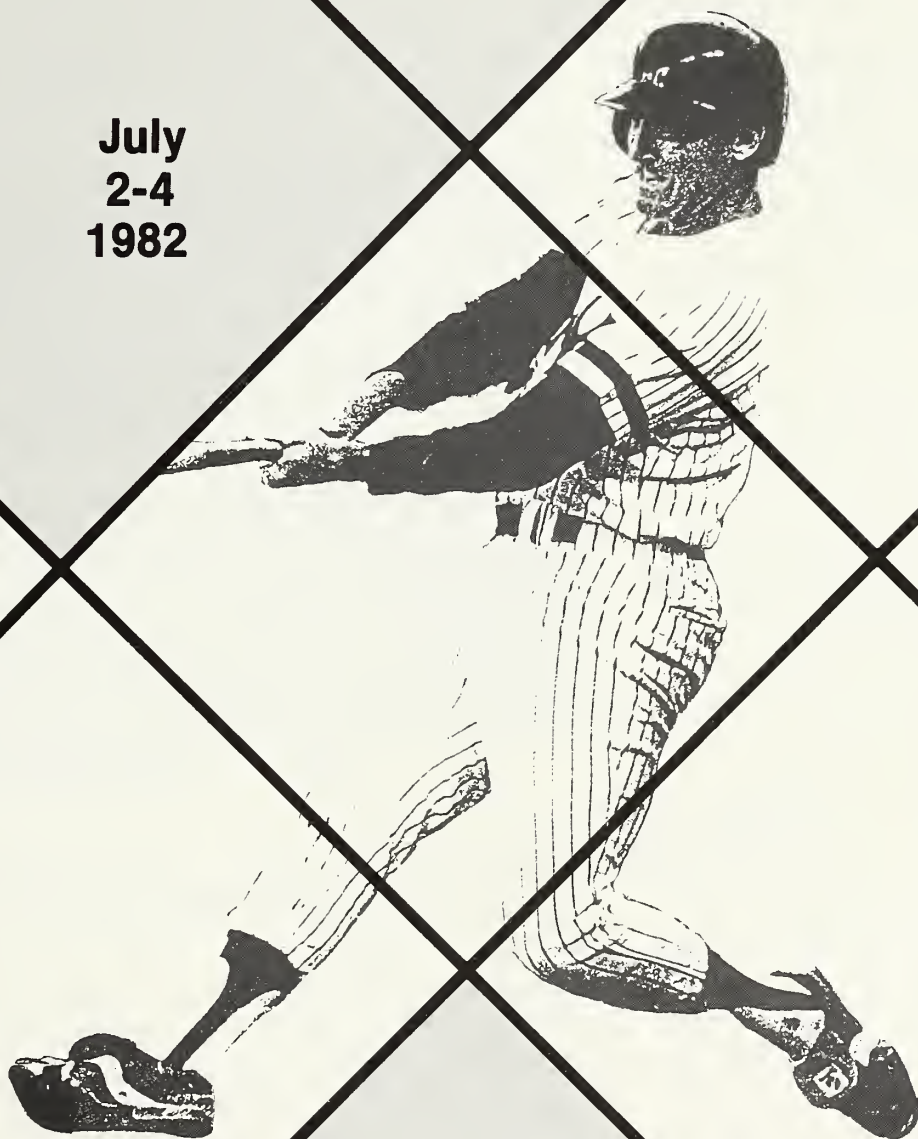
I close my book of memory
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4 Limit your smoking. If you smoke, use moderation. Don't smoke your cigarette all the way down. Limit the number of cigarettes you smoke. Don't smoke till noon. You'll breathe a lot easier if you cut down a little or even stop.

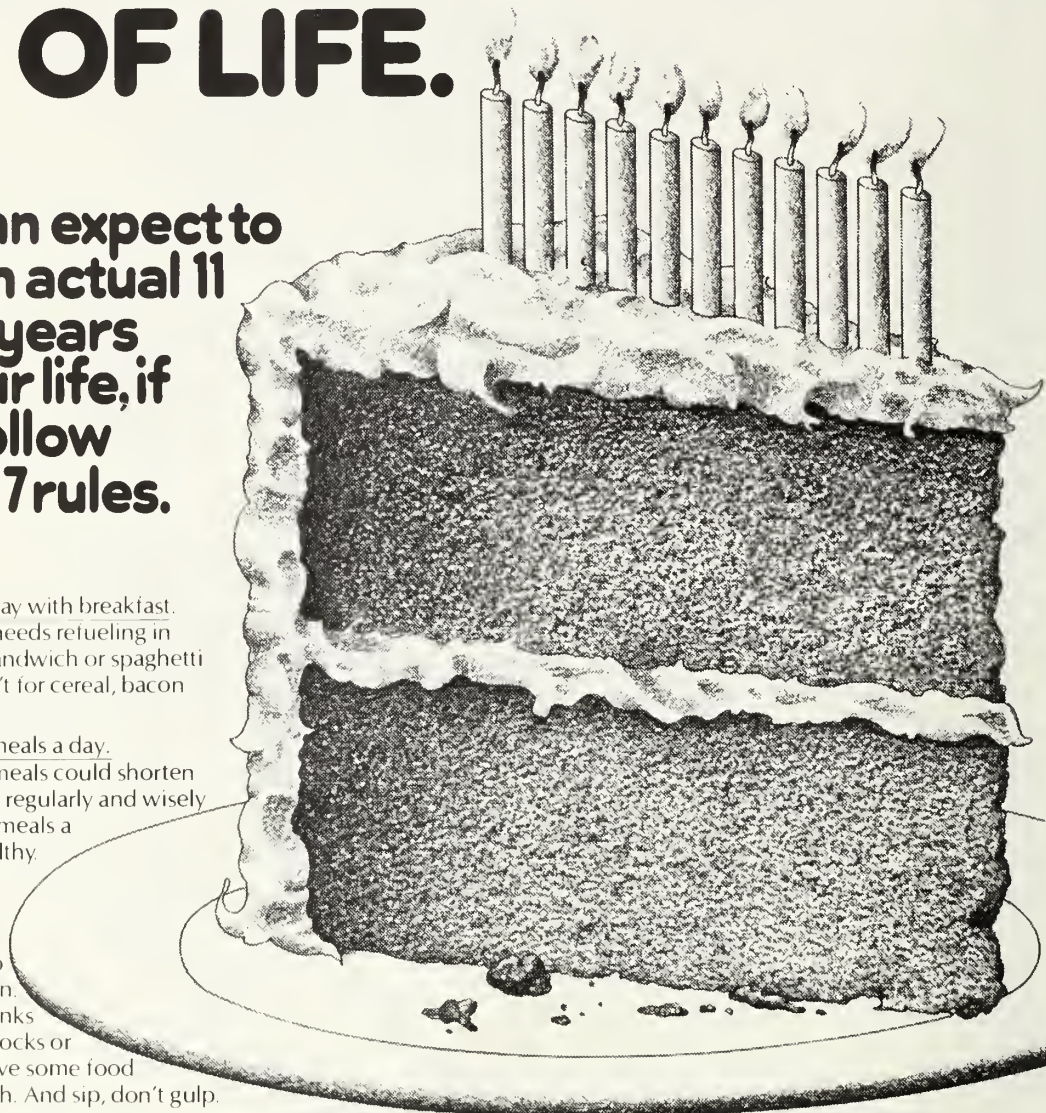
5 Watch your weight. Each extra pound you put on brings you closer to diseases of the heart, arteries, internal organs, even diabetes. But diet wisely. Follow your doctor's advice.

6 Schedule enough sleep. Your body needs enough time to rest. Get 7-8 hours sleep if you're between 20 and 55. If you're over 55, you could get by on slightly less.

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Clinical Diagnosis of Anterior Cruciate Ligament Instability

Gregory Mencio, M.D., and Frank H. Bassett, III, M.D.

ABSTRACT The anterior cruciate ligament is a commonly disrupted structure in the traumatized knee. The function of the intact ligament and the clinical significance of its rupture have long been debated. For years, the anterior drawer sign has been synonymous with anterior cruciate instability. More recently, the various tests for anterolateral rotatory instability have proven to be clinically dependable in diagnosing tears of this ligament. These newer tests and their more well-known predecessor are described, and their role in the overall assessment of the condition of the anterior cruciate ligament in the injured knee is discussed.

IN 1941 Brantigan and Voshell reviewed the vast literature concerning the movements and function of the knee joint ligaments.¹ Although much has been learned of the structure and biomechanical function of the joint since then, there is still considerable difference of opinion about certain aspects of this subject.

The role of the anterior cruciate ligament as a stabilizing structure in the intact knee and its contribution to instability following rupture in the traumatized joint remains one such controversy. Allman considers that although the initial disability of anterior cruciate ligament insufficiency is often minimal, it usually marks the beginning of the end of the knee.² Hughston disagrees, believing instead that the most common manifestation of a torn anterior cruciate ligament is a functionally insignificant increase in recurvatum.^{3,4}

In contrast to the controversy over function, it seems undebatable that the number of anterior cruciate ligament tears, either complete or partial, isolated or combined with

other lesions, is significantly high, especially in athletic trauma.² In Torg's series of 250 surgical knees, the anterior cruciate ligament was the second most frequently damaged structure.⁵ Others have reported similar findings.⁶⁻¹¹

Most agree that an accurate diagnosis of anterior cruciate ligament disruption must be made. Few, however, are as enthusiastic as Torg, who states that "an understanding of the majority of traumatic knee problems begins with the knowledge of the status of the anterior cruciate ligament."⁵

This paper is concerned with the clinical diagnosis of anterior cruciate ligament instability. Particular emphasis will be placed on the various clinical tests and maneuvers currently employed. The goal is to present a framework for a logical approach to assess this problem.

Clearly, it would be ideal to be present at the time of injury and to examine the patient immediately and later in clinic. Short of this, one has to rely on an accurate history and astute physical examination, while maintaining a high level of suspicion.

Several essential historical elements should lead one to consider cruciate ligament derangement. Most commonly elicited symptoms in-

clude: a "pop" at the time of injury, gross swelling due to hemorrhage immediately, and maximal hemarthrosis at 12 hours.⁹ In Marshall's series of acute knee ligament injuries, 90% of patients who gave a history of hearing or feeling a "pop" had anterior ligament rupture;² and in Erickson's study, the most common reason for acute hemarthrosis of the knee was injury to the anterior cruciate ligament.¹² The mechanism of injury, as described by the patient or an observer, is usually one of sudden deceleration and change in the direction of running, resulting in internal tibial rotation on the femur and valgus stress on the knee. A history of pain is, surprisingly, variable as is location of pain. It may present posterolaterally, anteromedially, or deep within the center of the knee.

In the case of chronic anterior cruciate ligament laxity, patients commonly complain of the knee "giving way," and describe the feeling of one bone slipping forward on the other.

ANTERIOR DRAWER SIGN

The gold standard for diagnosing anterior cruciate ligament instability has been the anterior drawer sign. Palmer originally described the maneuver used to elicit this sign

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Reprint requests to Dr. Bassett

in 1938 as follows: "With the patient lying down or sitting up, the examiner should grasp the lower leg just beneath the knee joint and, with the foot between his knees or upper arm and trunk, attempt to move the lower leg backwards and forwards."¹³ The test is considered positive if there is excessive, asymmetric anterior distraction of the tibia on the femur. Although somewhat vaguely defined, the test has been, with few exceptions, widely accepted through the years.

The current modification of the original test is much more precise (Figure 1). The test is interpreted in the same manner as described above, but with particular attention to the presence of a "soft" end point.¹⁴

A feel for the anatomy of the anterior cruciate ligament helps in understanding the interpretation of this test. The anterior cruciate is a complex, two-part structure, consisting of a narrow medial band and a broader lateral part, connected throughout their length by fibrous connective tissue which permits differential movement of the structures. The ligament is attached above to the posterior aspect of the lateral femoral condyle and courses downward, forward and inward to insert in a wide, depressed area in front of the anterior fibial spine.^{2,15}

The two parts of the ligament have different restraining effects which

vary with the position of the knee. The anteromedial band is tightest in flexion and is thought to be the prime check against anterior displacement of the tibia. The posterolateral band, conversely, is thought to be lax in flexion and taut in extension and to function primarily in preventing hyperextension of the knee and only secondarily in checking against anterior instability.¹⁶

Proponents of the anterior drawer test claim that a positive sign is unobtainable unless the anterior cruciate is at least partially torn. Marshall categorically states that "a positive drawer sign is indicative of injury to the anterior cruciate ligament. There can be no anterior drawer sign, regardless of any other concomitant ligament injury, unless a portion of the anterior cruciate ligament is torn."¹⁴

In support of this, he cites his series of surgically documented anterior cruciate ligament injuries in which more than 90% of the knees had a demonstrable anterior drawer sign preoperatively.^{2,16} Girgis and colleagues demonstrated that selective cutting of the anterior cruciate ligament in cadaveric and fresh human knees led to a positive drawer sign in flexion and extension.¹⁵ Wang and Marshall described a patient with a negative anterior drawer in the presence of lesions of both collateral ligaments, the posterior cruciate, and the posterolateral part of the anterior cruciate. Experimental severing of the same structures in cadaveric knees yielded similar results leading the authors to conclude that it is the anteromedial band of the anterior cruciate which primarily is responsible for anterior stability of the knee.¹⁶

TESTS FOR ROTARY INSTABILITY

Torg expressed his skepticism of the reliability of the anterior drawer test, pointing out that the test is often falsely negative due to various factors: tenseness of the knee as a result of hemarthrosis with reactive synovitis, protective muscle spasm, or mechanical blocking by a torn posterior horn of the medial meniscus. He thinks these problems can be circumvented if the knee is ex-

amined in extension. He calls this modification of the drawer test the Lachman test.⁵

This examination is performed with the patient supine and the involved leg elevated and held with the knee positioned between full extension and 15 degrees of flexion. The femur is stabilized with one hand while firm pressure is applied to the posterior aspect of the proximal tibia with the other. A positive test is described by anterior displacement of the tibia and a "soft" end point.⁵

Torg cites impressive data in support of the predictive value of this test in the presence of anterior cruciate ligament instability. In his series, there were no false positives and only five false negatives elicited, among 93 knees that were found surgically to have tears of the anterior cruciate ligament. By comparison, the anterior drawer sign was falsely negative in 42 of these same 93 knees and equivocal in another 14.⁵

Contrary to the more traditional interpretation, Hughston has found no evidence that the condition of the anterior cruciate has any correlation with a positive anterior drawer sign. As stated previously, he feels that the major function of the anterior cruciate is the prevention of hyperextension. Furthermore, he contends that a positive drawer sign



Fig. 1. Anterior instability of the knee is checked with the patient supine, hip flexed 45 degrees, knee flexed 90 degrees with the tibia in neutral rotation, and the foot planted in a weight bearing position. The examiner sits on the patient's foot to stabilize it, ensures laxity of the hamstring muscles, and then firmly checks the anterior mobility of the proximal tibia on the affected side and on the contralateral side for comparison.



Fig. 2. Technique of eliciting the "lateral pivot shift" as described by MacIntosh. This test is done with the patient supine and relaxed. The knee is extended, the leg elevated, and the tibia internally rotated. In this position the lateral tibial plateau will begin to subluxate forward in the presence of instability. As more valgus stress is applied to the knee, the tibia further displaces forward. As the knee is then slowly flexed, spontaneous reduction (the pivot point) occurs at 30-40 degrees of bending.

is actually a manifestation of so-called rotatory instability and due primarily to a tear of one of the capsular ligaments, not the anterior cruciate. He advocates that the anterior drawer test be performed as described above with the patient supine, knee and hip flexed, and foot planted, but also with the tibia in external and internal, as well as, neutral rotation and that the findings be reported as anterolateral, anteromedial, or just anterior instability (in the case that the two types of rotatory instability occur simultaneously).^{3,4}

Slocum and Larson actually first introduced the concept of rotatory instability in 1968.¹⁷ Since then, several varieties of this type of instability have been described. In 1962, Galway and MacIntosh coined the term "pivot shift" to describe the syndrome of anterolateral rotatory instability, that is anterior subluxation of the lateral tibial plateau and internal tibial torsion.^{18,19} Contrary to Hughston, they believed the basic responsible lesion to be rupture of the anterior cruciate ligament and proposed a test to assess this instability. Various modifications of the MacIntosh test (as the original came to be called) have been described:

The MacIntosh (pivot shift) test is done with the patient supine and relaxed. The knee is extended, the leg elevated, and the tibia internally rotated. In this position the lateral tibial plateau will begin to subluxate forward in the presence of instability. As more valgus stress is applied to the knee, the tibia further displaces forward. As the knee is then slowly flexed, spontaneous reduc-

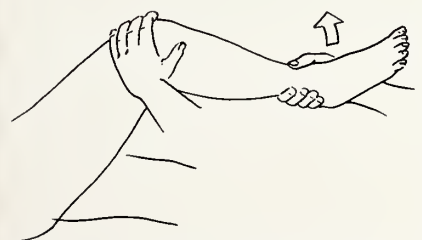


Fig. 3. The Losee test is also performed on the supine, relaxed patient. The knee and hip are bent to 45-50 degrees of flexion with the tibia externally rotated. The knee is then slowly extended while a valgus force is applied. If the test is positive, there is sudden subluxation of the lateral tibial plateau just prior to full extension.

tion (the pivot point) occurs at 30-40 degrees of bending (Figure 2).¹⁸⁻²¹

The Losee test is also performed on the supine, relaxed patient (Figure 3). The knee and hip are bent to 45-50 degrees of flexion with the tibia externally rotated. The knee is then slowly extended while a valgus force is applied. If the test is positive, there is sudden subluxation of the lateral tibial plateau just prior to full extension.^{14,20}

The Slocum test for anterolateral rotatory instability is done with the patient lying on his unaffected side so that the hip and knee of the normal limb are out of the way. The patient then rolls his pelvis to a position approximately 30 degrees from the examining table. In this position, the knee is in a valgus position, and the tibia is rotated internally (Figures 4 and 5). The examiner places both hands on the lateral aspect of the injured joint and assists the patient as he slowly flexes the knee. In a positive test, anterior subluxation of the lateral tibial plateau is felt at about 10 degrees of bending followed by sudden reduction as further flexion is achieved.^{14,20}

The "jerk test" advocated by Hughston is done with the patient supine, the knee flexed to 90 degrees and the hip to 45 degrees, and the tibia internally rotated. The knee is slowly extended as valgus stress is applied. A positive test is indicated by reduction in flexion, slight subluxation with extension, and relocation in full extension.^{3,4,14}

The data correlating the association of anterolateral instability, as demonstrated clinically by one or more of the aforementioned tests, with anterior cruciate ligament injury is convincing. All 45 patients in Slocum's series who were found clinically to have anterolateral instability had lesions of their anterior cruciates at arthrotomy.²¹ In Losee's, of 84 patients with a positive clinical test, 37 eventually required surgery, and all had anterior cruciate ruptures.²⁰ Kennedy's 52 subjects likewise showed 100% correlation between a positive clinical examination for anterolateral instability and a torn anterior cruciate at surgery.¹⁴

It is unfortunate that Hughston's data casts doubt on what otherwise



Figs. 4 & 5. The Slocum Test. The examiner places both hands on the lateral aspect of the injured joint and assists the patient as he slowly flexes the knee. In a positive test, anterior subluxation of the lateral tibial plateau is felt at about 10 degrees of bending followed by sudden reduction as further flexion is achieved.

would appear to be remarkably consistent findings. In his series of 228 cases of surgically-documented tears, he found that only 15.3% were associated with anterolateral or combined anterolateral/anteromedial instability. He believes that the primary lesion responsible for this type of instability is a tear of the middle third of the capsular ligament and points out that a coexistent tear of the anterior cruciate ligament will significantly augment a positive clinical sign of anterolateral instability.²⁻⁴

DISCUSSION

In spite of the controversy, we are of the opinion that anterior cruciate ligament instability is a common clinical entity that can lead to significant functional impairment and, therefore, warrants consideration. In this paper we have attempted to present a logical approach to diagnosing this problem clinically.

The clinician must approach the patient with an injured knee with a high index of suspicion, cognizant of the fact that the anterior cruciate is one of the most vulnerable supporting structures in the knee. It is frequently damaged in athletic injuries, and tears of the anterior cruciate should be looked for in conjunction with injury to other joint structures, especially the medial meniscus.

The history is often classic. Roughly 90% of patients reportedly

hear a "pop" at the time of injury. The mechanism of injury usually described is one of valgus stress and internal tibial rotation, deceleration, and change of direction. Hemiarthrosis, manifested by swelling and stiffness, follows acutely and becomes maximal at approximately 12 hours. Pain is not a consistently elicited symptom.

On physical exam, it is our opinion that the demonstration of anterolateral rotatory instability, with or without a demonstrable anterior drawer sign, is a reliable indication of anterior cruciate damage and correlates with surgical findings of the same. Furthermore, the tests described in this paper all have excellent predictive value and the clinician's decision to use one over another or in combination with others

should be strictly a matter of preference. Adjunctive procedures such as a single or double contrast arthrography, examination under anesthesia, and arthroscopy are of proven value in confirming the clinical impression.

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An hypothesis consists in the imagination of a cause which is supposed to intervene between the real cause, and that perceived by the senses. When a person, after being exposed to marshy exhalation, is taken with an intermittent, he is first affected with a chill, in which the skin is corrugated on its whole surface. The marshy exhalation, and the constricted state of the skin, are the two first links of the chain of causes, which characterize fever, as perceived by the senses. Cullen, obeying the overweening propensity of the imagination, which attempts to satisfy itself by the invention of more satisfactory modes of explanation, attributed this state of the skin to a spasm of its fibres. Here then the hypothesis consists in the spasm, which intervenes between the miasmata and the chilly state, and which, though entirely fictitious, is said to be the cause of the latter. This hypothesis satisfied the celebrated professor and his pupils, till its novelty wore away, and the excitability of Dr. Brown, a more agreeable supposition, alike recommended by its novelty and unsubstantiated by fact, drove it from the field; the same may be said of almost every other medical hypothesis. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

Fine-Needle Aspiration Biopsy in Gynecologic Oncology

Clarence L. Wilson, II, M.D., and John L. Currie, M.D.

ABSTRACT Fine-needle aspiration biopsy has regained popularity as a definitive and relatively simple technique, and is a vital part of the diagnostic armamentarium in gynecologic oncology. Indications, contraindications, clinical techniques and applications of this method are discussed, and four case histories are presented to illustrate the accuracy and ease with which this technique can be used by physicians at all levels of training. Properly performed fine-needle aspiration may virtually replace most other diagnostic biopsy techniques.

THE use of a small gauge needle and syringe to aspirate cells from a suspicious malignancy has recently regained popularity as a major diagnostic tool. Although Ellis and Stuart introduced fine-needle aspiration biopsy in the United States in the 1930s and it was subsequently popularized in the 1960s by Franzen, Zagicek and Soderstrom in Scandinavia,¹ the availability of precise imaging techniques, such as computerized axial tomography (CAT) and ultrasound, have contributed to a revival of this procedure in the United States.

Fine-needle biopsy is distinctly different from other needle biopsy techniques. Vim-Silverman, Menghini and "Tru-Cut,"* are large bore needles which actually allow a tissue biopsy rather than obtaining a cytologic specimen. These large bore (12 to 18 gauge) needles have stylets and such devices as a double pronged cutter, or sharpened notch to remove a core of tissue for histologic examination. Although these represent an attractive alternative to open surgical biopsy, fine-needle aspiration has been shown to be an

even further refinement of needle biopsy techniques, requiring little equipment and minimal experience. Such a skinny needle technique, when properly performed, provides a generous bolus of malignant cells, sufficient for accurate cytologic confirmation of the presence of cancer.

This communication describes the indications, contraindications and actual technique of fine-needle biopsy. Four cases are presented to illustrate the usefulness of this tool on a busy gynecological oncology service at North Carolina Memorial Hospital.

Indications

The indications for fine-needle aspiration biopsy in gynecology are summarized in Table I. In general, any palpable mass suspicious for

malignancy can be sampled. Recurrent cancer following chemotherapy, radiation, or surgery also can be detected by aspiration of localized lesions. Enlarged lymph nodes or subcutaneous nodules in patients are easily sampled in order to diagnose metastatic malignancy at distant sites. The transcutaneous, transvaginal, or transrectal approach may be employed for pelvic masses.^{2,3,4}

Contraindications

There are few definitive contraindications to fine-needle aspiration biopsy. In patients with a known coagulopathy, fine-needle biopsy should be done only with extreme caution. However, the risk of open biopsy or large bore needle biopsy would certainly be greater, and the need for a definitive diagnosis usually outweighs the risk of bleeding complications. In patients undergoing chemotherapy, careful attention should be given to platelet counts in order to avoid bleeding secondary to needle biopsy. Thus, although coagulopathy is a theoretical contraindication, clinical judgment might mandate careful skinny needle aspiration.

Acute or chronic pelvic inflammatory disease, especially in the presence of abscess, is a contraindication to needle biopsy. Quiescent pelvic inflammatory disease can

Table I. Indications for Fine-Needle Aspiration Biopsy

Pelvic Mass Suspicious for Malignancy.

1. Primary — only if ovarian mass not suspected.
2. Recurrent — after chemotherapy, radiation, or surgery.

Masses Suspicious of Metastatic Malignancy

1. Enlarged lymph nodes.
2. Subcutaneous nodules.
3. Palpable abdominal masses.

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*"Tru-Cut"® Travenol Laboratories, Inc., Deerfield, Ill.

flare up following instrumentation, and active disease can be exacerbated. Organomegaly adjacent to the suspected lesion could be considered a relative contraindication to a skinny needle biopsy.

Concern that seeding of the needle tract with tumor cells will occur secondary to needle biopsy cannot be supported. In more than 2,500 fine-needle aspiration biopsies performed at Toronto General Hospital, no evidence of seeding or tumor dissemination was reported.³ On the other hand, leakage from puncture of mobile ovarian tumors with tumor cell implantation is a more dangerous possibility.⁴ Thus, undiagnosed mobile or cystic masses, suggestive of an early ovarian neoplasm, should *never* be subjected to any blind biopsy procedure.

Contraindications are summarized in Table II.

Technique

The actual technique of fine-needle aspiration biopsy is simple. Although Scandinavian workers^{2,4} have developed a special apparatus for skinny needle biopsy, ordinary plastic syringes and standard needles which are readily available provide good results without the added cost of special equipment. The needle, usually 20 or 22 gauge, is locked onto a 10 to 20 cc syringe. The length of the needle depends on the approach to the involved site. A 1½ inch needle is very suitable for transcutaneous biopsies, while a 3-inch spinal, or even a 6-inch pudendal needle may be necessary for the transvaginal or transrectal approach. Often an Iowa trumpet guide is helpful in reaching lesions high in the vagina, or amputation of the plastic sheath of a spinal needle can provide an adequate guide. Local anes-



Fig. 1. Fine needle aspiration of a suspicious lymph node in the groin. The mass is immobilized and the needle is thrust sharply into its center. During entry into the mass *no* negative pressure should be applied to the syringe. For a lesion in the pelvis, the transvaginal and transrectal approach can be used, with the needle guided by the operator's finger or Iowa trumpet.

thesia may precede needle insertion depending on the site of the lesion, but is usually not necessary.

The suspicious mass is localized and the insertion site is prepped with an antiseptic solution. With *no* negative pressure on the syringe barrel, the needle is inserted into the mass (Figure 1). Negative pressure is then maintained while the needle is oscillated inside the lesion in several directions (Figure 2). The negative pressure *must* be released prior to needle removal from the interior of the mass.

The aspirated cellular material is forced out of the needle onto one or more glass slides and *immediately* fixed (Figure 3). Although our cytologists prefer "Pro-Fixx,"* (2-propanol 68.5%, 2-propane 17.1%, and polyethylene glycol 6.9%), a less complex solution of 95% ethanol has been found to be satisfactory by others.⁵ The slides are then stained by the routine Papanicolaou method and interpreted by a cytopathologist with special interest in this technique.

If sufficient cellular material has been obtained, or if a second aspiration is done, the specimen can be flushed into a small container of normal saline. The suspension can be centrifuged in the laboratory and a cell block preparation stained for

further delineation of cellular features.

The aspirated material may contain various normal epithelial and mesenchymal elements, depending on the sampling route. A clear patient history and aspiration sampling site localization should always be indicated on the cytology requisition to facilitate interpretation. Often, necrotic debris may accompany malignant elements in the sample to further challenge the cytologist.⁵

Specimens may be unsatisfactory for several reasons. The most common problem is drying of cells on the slide with poor preservation of cellular detail because of inadequate or slow fixation. Error can easily be introduced by applying excessive negative pressure to the syringe before insertion or after withdrawal of the needle; this in-

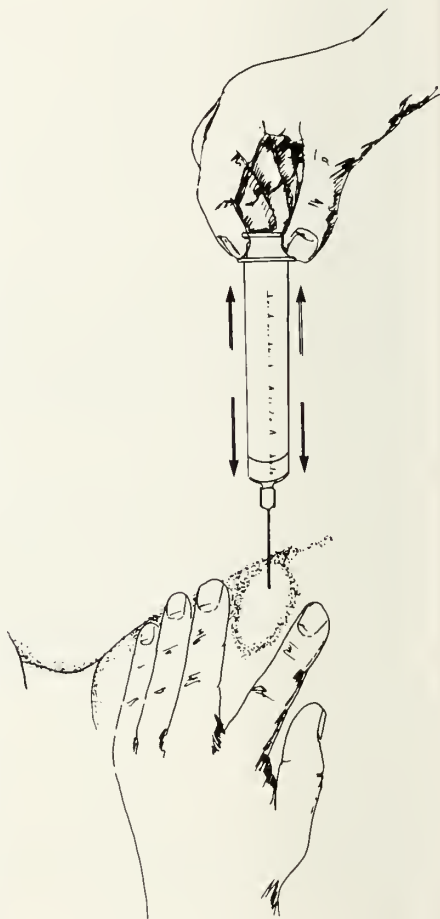


Fig. 2. Once the needle is in the approximate center of the mass, negative pressure is applied to the plunger of the syringe, and the needle is oscillated inside the lesion for 2-3 mm in all directions. Negative pressure *must* be released prior to removal of the needle from the lesion to avoid contamination.

Table II. Contraindications to Fine-Needle Aspiration Biopsy

Relative

1. Coagulopathy.
2. Adjacent organomegaly.

Absolute

1. Acute or chronic PID.
2. Undiagnosed mobile or cystic ovarian mass.

"Pro-Fixx," Scientific Products, McGraw Park, Ill.

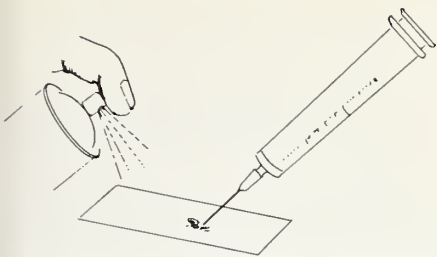


Fig. 3. As soon as the needle is withdrawn, the aspirated material is expelled onto a common glass slide, and immediately fixed. Allowing the slide to dry even for a few seconds may alter diagnostic sharpness of cells in the preparation. The slide is stained and interpreted by the cytopathologist.

corporates normal squamous cells or other elements present in the needle tract. Also, inadequate negative pressure while actually in the lesion or poor oscillation during sampling may give poor results.⁶

CASE STUDIES

Case 1

A 50-year-old white female was treated with 5,000 rads externally to the whole pelvis, 48-hour intracavitary cesium, and a sidewall boost to 6,000 rads after diagnosis in April 1980 of a moderately differentiated squamous cell carcinoma of the cervix, Stage II-B. Follow-up in October 1980 revealed a left pelvic mass extending from the mid-line to the left pelvic sidewall. A fine-needle aspiration biopsy was obtained via pudendal needle and guide. Cytology examination showed bacteria, neutrophils, and degenerative and necrotic squamous cells without conclusive evidence of tumor. The procedure was repeated by the same physician and cytology of the second specimen was conclusive for squamous cell carcinoma.

Case 2

A 57-year-old white female was found to have unresectable papillary adenocarcinoma of the ovary at laparotomy in October 1980. Chemotherapy was initiated, but in December 1980 inguinal lymph nodes and a right supraclavicular lymph node were palpable. Fine-needle aspiration of the supraclavicular node using a 22-gauge needle on a 10 cc syringe revealed metastatic adenocarcinoma consistent with ovarian primary lesion.

Case 3

A 49-year-old black female was treated in June 1980 with 6,600 rads externally to the whole pelvis for a poorly differentiated squamous cell carcinoma of the cervix, Stage III-B. In November 1980 she noted a painful left chest wall mass. A "Tru-Cut" large bore needle biopsy of this lesion was obtained which proved inadequate for diagnosis. A fine-needle aspiration biopsy again using a 22-gauge needle then yielded conclusive cytologic evidence for squamous cell carcinoma.

Case 4

A 60-year-old black female was diagnosed in September 1976 as having poorly differentiated squamous cell carcinoma of the cervix, Stage III-B. She was given 5,000 rads externally to the whole pelvis, 48-hour intracavitary cesium, and a 400 rad sidewall boost. She was readmitted in October 1980 with left leg edema when a left supraclavicular lymph node was felt. Fine-needle aspiration biopsy using a 22-gauge needle was obtained of the supraclavicular lymph node which demonstrated squamous cell carcinoma.

DISCUSSION

As these case histories demonstrate, fine-needle aspiration biopsy can be a useful tool in gynecologic oncology. A disposable plastic syringe with a 22-gauge needle is a simple and inexpensive piece of equipment when compared to the more elaborate large bore tissue biopsy needles, and it is certainly less complex than the instruments required for open surgical biopsy. Although fine-needle aspiration biopsy cannot replace surgical exploration for staging, when the pathologic diagnosis is the primary consideration, the simpler procedure is preferable.

Sevin, et al, recently reported 140 consecutive fine-needle aspiration biopsies in 124 patients.² They found the reliability of fine-needle aspiration in differentiating between malignant and benign conditions to be 96%. The diagnostic accuracy for predicting malignant disease was 95%; all patients had subsequent

histologic confirmation. When the fine-needle specimen contained malignant cells, specificity of the histologic diagnosis was suggested in 98% of the skinny needle preparations.

In presenting their experience with 2,591 fine-needle aspiration biopsies done between 1967 and 1978, Tao, et al, found fine-needle aspiration biopsy to be a safe and inexpensive method for obtaining specimens for pathologic diagnosis from virtually any accessible localized lesion in the body.³ Their early detection rate for malignant disease was 83% but increased to 93.4% at the time of their report. This improvement in accuracy was partially attributable to increased experience by the cytopathologist interpreting the preparations.

Nordqvist and colleagues reported 77 fine-needle aspiration biopsies in 74 patients with gynecologic malignancies.⁴ Fifty-eight cases had a histologic diagnosis by surgical biopsy; there was excellent cytologic correlation in 55 patients, and no patients suffered complications attributable to the procedure.

At North Carolina Memorial Hospital, fine-needle aspiration biopsy is frequently used on the gynecologic oncology service by residents, fellows and attending physicians in the outpatient clinic and on the inpatient wards. There has been only one known complication in 50 such biopsies by physicians at all levels of training — one patient developed pelvic inflammatory disease following fine-needle aspiration of a suspicious vaginal lesion but responded well to antibiotic therapy.

Fine-needle aspiration biopsy may avoid many of the complications associated with histologic biopsy by the larger bore needles. A Menghini needle has a five times greater cross-sectional diameter and a Vim-Silverman needle has a 12 times greater cross-sectional diameter than a 22-gauge needle.³ One group reported complications in 25 of 74 biopsies using the Vim-Silverman needle, including bleeding, infection and fistula formation.⁷ In the same study, 77 fine-needle aspiration biopsies were performed without any compli-

cations with the exception of transient fever in one patient.

Fine-needle aspiration biopsy can be used with outpatients as well as inpatients with a diagnostic accuracy as high as 95%. The technique of fine-needle aspiration biopsy requires no prerequisite surgical skills and can certainly be done by a family practitioner or internist as easily as by a gynecologist or general surgeon. Except for the contraindications (coagulopathy, pelvic inflammatory

diseases, adjacent organomegaly, undiagnosed solitary ovarian mass), any definitive mass within reach can be aspirated for cytological evaluation. Thus, fine-needle aspiration biopsy is a useful technique which can be easily done by all physicians. With close cooperation of the cytologist, this method can replace most other biopsy techniques.

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Thus, a celebrated general, during a dysentery, finding the number of his physicians too small, issued by their advice, a general order, that a certain quantity of Glauber salts should be administered to each soldier, at regular intervals; the army was accordingly soon freed from disease. Here the frequent deaths, and the sudden relief afforded by the medicine to thousands, removed all doubt with regard to its efficacy. During one of the campaigns of Austria in Hungary, the retinue of a certain count was entirely free from an intermittent which was general in the army, because bark was regularly administered to his followers: Here the number of the trials, and the continuance of the disease among thousands, who did not take the medicine, proved its efficacy. In the same campaign, the scurvy prevailed; mercury was exhibited, and death was the uniform consequence; as the disease raged extensively, it settled the noxious influence of the remedy beyond controversy. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

The Hooper Memorial Lecture: Vistas In the Management Of Bleeding Esophageal Varices

George Johnson, Jr., M.D.

INTRODUCTION OF DR. JOHNSON

It seems most appropriate that this lecture be presented not only by a native North Carolinian but also by a native of Wilmington, Dr. Hooper's home. Further, our speaker's father was a partner of Dr. Hooper.

Dr. George Johnson, Jr., was born in Wilmington and grew up in a medical milieu. After graduating from high school, he joined the Army as a private in 1944, attaining the rank of first lieutenant at discharge in 1946. He returned to Chapel Hill, receiving his B.S. in medicine in 1949 and certificate in medicine in 1950. He received his doctorate of medicine from Cornell University Medical College in 1952 and remained at the New York Hospital for graduate education in surgery until 1958. He was named instructor in surgery at Cornell in 1958-59. After two years of private practice in Durham and as a clinical instructor at the University of North Carolina, he joined the fulltime faculty as an assistant professor of surgery in 1961. He was named professor of surgery in 1969.

Dr. Johnson's clinical interests have been related to cirrhosis, vascular disease, shock and trauma. These interests have been nicely complemented by investigations in the laboratory involving hemodynamic changes accompanying cirrhosis, pulmonary embolism, and arteriovenous fistulae. He has been responsible for the development of a clinical laboratory for the study of patients with peripheral vascular disease. He is a dedicated teacher and highly respected by our students and house staff.

Dr. Johnson has a catholicity of interests and accomplishments, particularly in trauma, vascular surgery, traffic safety, rehabilitation and the development of emergency medical services. He has also been president of the University Association for Emergency Medical Services, president of the North Carolina Chapter of the American College of Surgeons and chairman of several state and national committees. He is currently a Governor of the American College of Surgeons. (His devoted service as a former member of the editorial board of the "North Carolina Medical Journal" should also be remarked on as further evidence of Dr. Johnson's broad interests. Ed.)

Dr. Johnson's role as an educator, surgeon and investigator was further recognized in 1974 when he was named the Roscoe B. G. Cowper Distinguished Professor of Surgery.

A recitation of an individual's achievements and responsibilities often fails to give a real picture of a person. Dr. Johnson's role in the development of the vascular surgical service at the North Carolina Memorial Hospital and his complete commitment to patient care and medical education qualify him to be the complete academic surgeon. His wise counsel is sought by students, residents, hospital administrators, as well as the department chairman.

Theodore H. White in "Search of History" stated that people can be separated into "large" and "small" according to whether their ideas are their own or the ideas of others. According to this criterion, Dr. Johnson belongs in the "large" category.



George Johnson, Jr., M.D.

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Presented at the 126th Annual Session of the N.C. Medical Society, May 2, 1980, Pinehurst, N.C.

INTRODUCTION

In 1924 a young physician from Wallace finished the School of Medicine at the University of Pennsylvania and started an internship at James Walker Memorial Hospital in Wilmington. Following this he was physician for the Atlantic Coastline Railroad and then for a year studied obstetrics and gynecology at the Chicago Lying-In Hospital. He returned to Wilmington in 1927 to begin the practice of medicine.

The chief of surgery at the James Walker at this time was the leading surgeon for southeastern North Carolina. He had the biggest practice and was well respected by both physicians and the public of this and surrounding communities. He asked this young physician who had just returned to join him in practice. This was not a preceptorship; it was not for salary; it was to split the income 50/50. This was in spite of the fact that the elder physician had built up a very impressive practice over the previous 10 years.

Thus, in 1927, Dr. Joseph Ward Hooper (Figure 1) and my father became partners in the practice of medicine. There was never an argument between them. There was no written document regarding their practice. The income was split 50/50 to the day of Dr. Hooper's death in 1952.

I hope this presentation will in some way pay homage to that association. Certainly the topic has no relation. My father was almost a teetotaler and Dr. Hooper was not interested in or concerned with the evils of alcohol.

“IF, as Allen Whipple had hoped, an Eck fistula could be fashioned without mortality or morbidity in patients with bleeding esophagogastric varices, this collection of articles would never have been assembled.”¹

This statement by Gardner Child in his book in 1974 reflects the predicament in which we find ourselves in the operative treatment of esopha-

geal varices. Today, I would like to highlight the history of the surgical treatment of esophageal varices, dwell on some of the physiology of the portal venous system — both normal and pathological — look at some of the operative modalities in current use, and end with a stepwise approach which reflects the management of esophageal varices as we practice it today.

Cirrhosis of the liver affects 10 million patients in the United States. Forty-five percent of these have esophageal varices. It is the third most common cause of death between the ages of 25 and 65. In North Carolina, it is the fourth most common cause of death between the ages of 35 and 65. It accounts for more deaths than motor vehicle accidents or suicides.

At the North Carolina Memorial Hospital, it has accounted for one in every 143 admissions over the past 10 years. Thus, there has been one admission for cirrhosis every third day. There have been 1,400 autop-



Fig. 1. Dr. Joseph Ward Hooper

sies performed in a six-year period — 12% of which have revealed cirrhosis of the liver. Thus, our discussion today is relevant — and relevant to the people of North Carolina.

The history of the operative treatment of esophageal varices begins with Nicholay Eck (Figure 2) who in 1877 as a surgeon in the Russian Army, created a fistula between the portal vein and the inferior vena cava. He suggested its use for ascites but before he could implement his thoughts, he was transferred to Siberia and never heard of again.

Guido Banti (Figure 3) was an Italian pathologist who in 1883 described a syndrome of splenomegaly, anemia and progressive cirrhosis of the liver. He attributed the seat of the pathology to the spleen. Around the turn of the century, he convinced the great American internist, Sir William Osler, that the treatment of choice for splenic anemia was splenectomy. Unfortunately, splenic anemia included bleeding esophageal varices as well as hypersplenism and, perhaps, some other diseases. It took about 40 years for Pemberton of the Mayo Clinic to demonstrate that Osler and



Fig. 3. Guido Banti (1852-1925)

his friend, William Mayo, were in error in treating all patients with splenic anemia with splenectomy.

In 1945, at the Spleen Clinic in Columbia, Allen O. Whipple² and his associates, Blakemore, Lord and Voorhees, popularized the portacaval shunt. It took another 20 years to demonstrate that this procedure had little or no influence on the longevity of the patient with bleeding esophageal varices. Thus, it has taken over 100 years to demonstrate the relation of cirrhosis of the liver, portal hypertension and esophageal varices, and to demonstrate some of the biochemical and physiological alterations imposed by the portacaval shunt.

To understand the pathology and management of patients with portal hypertension and bleeding esopha-

geal varices, some of the anatomy of the portal venous system must be understood (Figure 4). The systemic circulation of the upper abdomen includes the inferior vena cava and the renal veins. The portal venous system is made up of the greater and lesser splanchnic system. The former includes the portal vein and the tributaries to it from the intestinal system and carries nutrients from the intestinal tract to the liver. The lesser splanchnic system drains the spleen, the stomach and the esophagus and connects to the azygous vein in the chest via the esophageal veins. It is within the lesser splanchnic system that esophageal varices occur.

The popular theory for the cause of portal hypertension is an obstruction to the portal venous flow through the liver. The portacaval shunt, or Eck fistula, would decompress the esophageal varices through the coronary vein. Were it not for the interference with hepatic metabolism and from the encephalopathy caused by the immediate entry of nitrogenous materials into the systemic circulation, this procedure would still enjoy the widespread popularity it had a few years ago.

Nathan Womack (Figure 5) of Chapel Hill was one of the first to challenge this ingrained belief that the sole cause of portal hypertension was obstruction. He hypothesized that in many instances, the



Fig. 2. Nicolay Eck (1847-1908)

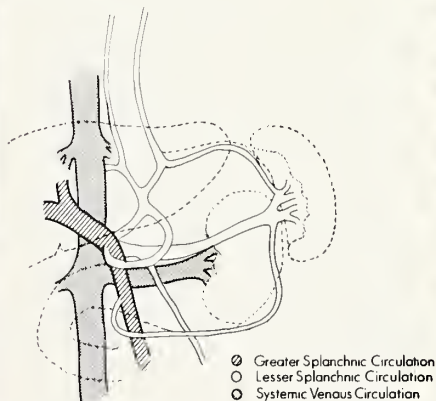


Fig. 4. The anatomy of the portal venous system.

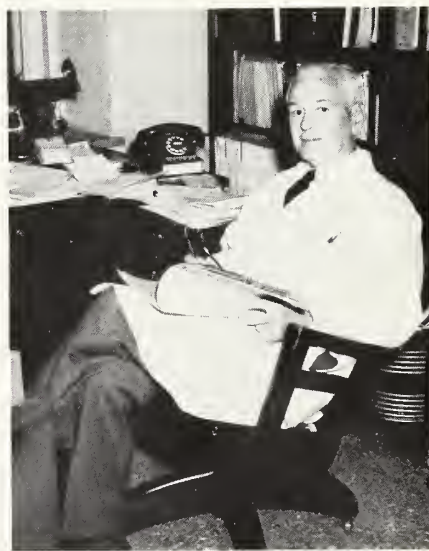


Fig. 5. Nathan Womack (1901-1975)

cause of portal hypertension was a massive inflow into the portal venous system — perhaps from the spleen, the stomach or other arteriovenous communications. An operation³ was devised to correct this. The procedure that he developed was designed to ablate the varices and the collateral veins and to decrease the portal venous inflow.

The ablative operations have been popularized by three schools: the Womack in Chapel Hill, the Hassab⁴ in Egypt and the Sugiura⁵ in Japan. The distinguishing features of the Womack procedure include resection of the greater curvature of the stomach in association with splenectomy and gastric devascularization. The results in 60 consecutive patients revealed a long-term survival equivalent to that following the portacaval shunt. However, the 35% operative mortality and the high incidence of recurrent bleeding steered us away from continuing this procedure except in highly selective instances. Those individuals with hypersplenism or without satisfactory veins for shunts, may be candidates for this procedure.

Hassab of Egypt presented the decongestive operation which consists of splenectomy plus obliteration of the perigastric and periesophageal vessels. He has reported excellent results. Unfortunately, his patients had portal hypertension associated primarily with schistosemiasis which in all likelihood is a different disease from the Laennec's and posthepatic cirrhosis that is seen in this country.

The Sugiura procedure's distinguishing feature is transection of the esophagus in association with gastric and esophageal devascularization. It would appear that they are also operating for a type of non-alcoholic cirrhosis that is an entirely different disease than we see in the United States.

The selective shunts are in vogue in most clinics at this time. The distal splenorenal shunt is an innovative procedure developed by Zeppa and Warren and recently reported on by Rikkers.⁶ It is an attempt to selectively decompress the varices through the spleen into the renal vein. It is essential in this instance to

separate the lesser from the greater splanchnic circulation in order for this operation to be effective. Current data are beginning to raise several provocative questions. It would appear that over the course of time, these communicating channels reconnect. This does not necessarily mean the patient will rebleed. It may be that the ravages of hepatitis have subsided, the patient has stopped drinking alcohol, and/or other less dangerous collaterals have developed decompressing the portal venous system.

Another interesting and innovative procedure was developed by Inokuchi of Japan in which a saphenous vein graft was used to shunt the coronary venous circulation into the inferior vena cava while doing a lesser from greater splanchnic disconnect.

The total shunts are associated with a low mortality, a low incidence of rebleeding, yet a real danger from encephalopathy and perhaps a progression of cirrhosis because of portal venous blood diversion from the liver. The ablative operation is associated with a high mortality and a high incidence of rebleeding yet essentially no encephalopathy and preservation of liver flow. The selective shunts can be done with a relatively low mortality, a low incidence of rebleed, no encephalopathy and no decrease in liver flow. The long-term results are just beginning to be available.

Thus, we have three general types of operative procedures to treat bleeding esophageal varices; total shunts, ablative procedures and selective shunts. The total shunts include the end-to-side portacaval shunt which completely diverts portal venous blood away from the liver, the side-to-side portacaval shunt which also diverts portal flow away from the liver and, in fact, decompresses the intrahepatic portal venous system, and the more current mesocaval shunt which was hoped would partially decompress the portal venous system yet allow hepatopetal flow into the liver. Unfortunately, this does not usually occur.

While the main thrust of this presentation has been to present the physiology of the portal venous sys-

tem associated with portal hypertension and the clinical management of bleeding esophageal varices, angiographic evaluation of the portal arterial and venous system has been essential in the search for management of this disease. These include a celiac and superior mesenteric artery angiogram looking for anomalies of the arterial system and demonstration of a patent splenic and portal vein and hepatopetal flow on the portal venous angiogram. Hepatic vein angiograms are performed to see the architectural structure of the liver and to measure the hepatic wedge pressure which reflects the portal venous pressure.

With this knowledge of the pathological physiology of the portal venous system and a knowledge of the anatomy as defined by x-ray, a decision regarding a choice of one of the operations is made. For the person who is an incurable alcoholic, perhaps the most important thing is to stop the bleeding. In this instance, we may well choose a portacaval shunt. If the condition of the liver is such that there is already hepatofugal flow (away from the liver), a total shunt is suggested since further diversion of the blood from the liver does no harm. Neither the ablative nor the distal splenorenal shunt should be performed as an emergency since they are technically more difficult procedures. In those patients in whom there are no available veins, an ablative operation should be strongly considered. The ability to stand the nitrogen load can be tested by giving a challenging dose of urea and monitoring the serum ammonia. For those patients who have uncontrollable ascites, a distal splenorenal shunt or ablative operative procedure may be harmful. Hypersplenism is not always cured by the portacaval shunt or the distal splenorenal shunt. Thus, this might be an indication to consider the ablative operation. Actually, the best results with the ablative operation are in those people who have large spleens and hypersplenism as measured by a platelet count less than 100,000. Finally, and perhaps most important, are the expertise of the surgeon and the facilities of the institution. Thus,

for the surgeon who does infrequent operations as treatment for bleeding esophageal varices, the distal splenorenal shunt and the ablative operations can be extremely difficult.

The clinical management of the patient with upper gastrointestinal bleeding is depicted on the algorithm (Figure 6). Immediate endoscopy is performed. For the patient who has nonvariceal bleeding, the therapy is as usually indicated. If varices are found but are not bleeding, we observe and evaluate them. An elective operation is performed only if there has been massive hemorrhage or it is a second or third hemorrhage. If, on endoscopy, the varices are bleeding, we give intravenous pitressin, correct the coagulation abnormalities and give blood transfusion based on the hemodynamics and not on the hematocrit. There is a correlation between increase in systemic pressure and increase in portal venous pressure. Therefore, we should be certain that the central venous pressure is not

elevated if at all possible. In addition, one of the more important considerations in increasing viscosity of blood are the red cells. An excess of red cells in these patients has a significant influence on the viscosity and, thus again, on the portal venous pressure.

If the bleeding is controlled, we observe and evaluate and perform an elective operation if there has been massive hemorrhage or if it is the second or third minor hemorrhage.

If the bleeding continues, however, we attempt Sengstaken-Blake-more tube tamponade. If the bleeding is controlled, we observe and evaluate in the hospital and perform an elective operation if indicated. If the patient continues to bleed with a Sengstaken tube, an emergent operation is performed.

There are those who embolize the coronary vein and short gastric veins by transhepatic catheterization. It is not a definitive procedure but it may help avoid the emergent operation.

Sclerotherapy of the varices

through the esophagoscope has been recorded with increasing frequency. Excellent early results have been reported⁷ although repeated injections are required.

Orloff⁸ recommends immediate emergent operation as soon as the patient is seen and the diagnosis of bleeding esophageal varices is confirmed. We do not subscribe to this. He reports a 50% mortality rate with this operation. We think we can do better than this.

Today I have tried to present to you that cirrhosis of the liver and esophageal varices is a prevalent, disabling and costly disease. The treatment of esophageal varices is a challenge to both medical and surgical colleagues. The operations consist of total shunts, ablative operations and selective shunts. They have been presented relative to the hemodynamics of the lesser and greater splanchnic systems. The results of the selective and ablative operations depend upon our ability to separate these two venous systems. Whether continuation of this separation is essential to prevent recurrent bleeding remains to be seen. The choice of operations should be individualized according to the patient and will depend on the expertise of the surgeon and the facilities of the institution.

It has been a pleasure for me to honor the association of my father and Dr. Joseph Ward Hooper with this review of the current therapy for portal hypertension.

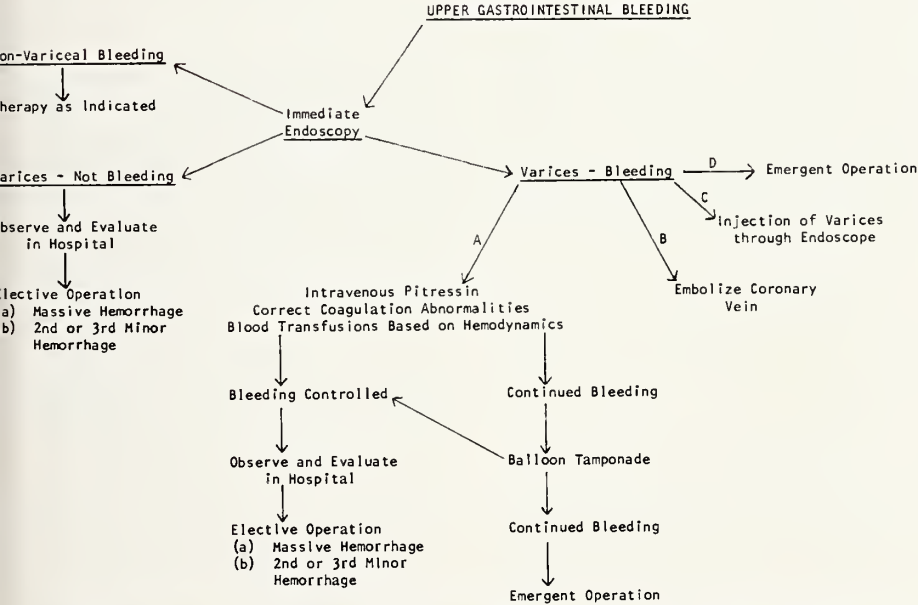


Fig. 6. Management of the patient with bleeding esophageal varices who presents with upper gastrointestinal bleeding.*

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Prophylaxis of Neonatal Eye Infections

Robert G. Dillard, M.D.

RECENT developments on the subject of prophylaxis for neonatal gonococcal eye infections have made this once simple issue a complicated one. Topics as diverse as mother-infant bonding and Chlamydial and group B streptococcal infections provide a challenge to the physician attempting to come up with a regimen which both pleases an increasingly vocal group of parents and provides the optimum in safety and efficacy for the newborn.

The importance of eye-to-eye contact in establishing optimal mother-infant relationships has been stressed by Klaus and Kennell.¹ They believe that the visual system provides "one of the most powerful networks for the mediation of maternal attachment." Silver nitrate (1%) given immediately after birth has been shown to inhibit eye opening in the first 20 minutes of life.² Mothers of late treated infants in the above study were "surprised and delighted with their wide-eyed babies." In spite of the latter observation, the mothers of early and late treated infants exhibited no differences in behavior with respect to "baby focused attention or excitement during this initial social encounter."² It is not known whether impairing this early visual experience has a negative effect on the way that parents interact with their children on a long term basis. A recent critical review of the subject of maternal attachment questions the evidence

that such early postnatal experiences profoundly affect the development of the mother-infant bond.³

However, because of the above issue, many (including parents) have promoted the instillation of silver nitrate drops after the initial parental encounter when the infant has been admitted to the nursery. Although there are no definitive data on the safety of delaying treatment, several committees of the American Academy of Pediatrics state that doing so "for up to one hour after birth probably will not affect efficacy."⁴

Another issue regarding silver nitrate relates to its failure to prevent neonatal Chlamydial eye infections ("inclusion blenorrhea"). *Chlamydia*, like many sexually transmitted organisms, is becoming a common organism causing neonatal infections. Erythromycin, but not tetracycline, may be effective as a prophylactic agent for neonatal Chlamydial eye infections.^{5,6} Neither agent has been shown to prevent respiratory illness caused by that organism.

That neither erythromycin nor tetracycline induces a chemical conjunctivitis (eye opening has not been studied) and that at least one agent may have the additional advantage of being effective against *Chlamydia* have led some to recommend these agents over silver nitrate as drugs of choice in neonatal prophylaxis for gonococcal eye infections. In fact, the Center for Disease Control (CDC) has recently revised its recommendations in this regard by stating that "ophthalmic ointment

or drops containing tetracycline or erythromycin or a 1% silver nitrate solution" are effective and acceptable.⁷

Both erythromycin and tetracycline appear to be effective agents for the prevention of neonatal gonococcal eye infection.^{8,9} However, neither has been tested in populations of infants born to mothers who are at high risk for having gonorrhea. The decision by the CDC to alter its recommendation, therefore, may be premature, especially in view of the increasing incidence of gonococcal infections in this country.

Siegel, et al, suggest that intramuscular (IM) penicillin is an effective prophylactic agent for neonatal gonococcal and group B beta streptococcal infections;¹⁰ however, an increased incidence of penicillin-resistant pathogens in the study led them to oppose routine administration of IM penicillin for the present.

After careful consideration of these data, the Committee on the Fetus and Newborn of the N.C. Chapter of the American Academy of Pediatrics recommends the following:

1. That silver nitrate (1%) is still the agent of choice for routine prophylaxis of neonatal eye infections.
2. That it may be instilled up to *one hour* after delivery.
3. That the infant's eyes should *not* be irrigated after instillation.
4. That in the event of parental objection to the use of silver nitrate, either tetracycline (1%) ophthalmic ointment or drops or erythromycin (0.5%) ophthalmic drops may be used.

Chairman, Fetus and Newborn Committee, North Carolina Chapter, American Academy of Pediatrics, Associate Professor of Pediatrics, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, N.C. 27103

5. That until more information is available, IM penicillin should not be used as a prophylactic agent for neonatal gonococcal eye infection.

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Though the history of the operation of medical causes is obscure, from their variety and their conflicting nature, yet by a proper examination of them, great triumphs have been achieved over the most dreadful maladies; and it is by observation, accurately appreciating the circumstances, on which the efficiency of remedies is decided, that the benefits of our science are most conspicuous. Thus, for instance, with regard to the treatment by venesection of inflammatory diseases, the most common of all morbid affections: However hidden may be the seat of the inflammation — in the eye, the head, the lungs, if its symptoms be present, this plan of treatment effectually removes it, and prevents, when judiciously administered, the formation of abscesses, which almost always end in the destruction of the organ, and if the organ be necessary to life, in the death of the individual. —*Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

1982 Mid-Winter Conference: Can the Practicing Physician Be A Successful Politician?

The Honorable Otis R. Bowen, M.D.

NOTE: The 1982 Mid-Winter Conference, held in February in Winston-Salem, was a great success with over 150 participants. Previously called the Conference for Medical Leadership, the meeting originated in 1959 as a means of instructing county medical society officers and committee chairmen. However, with organized medicine increasingly called upon to represent the views of the profession on a wide variety of issues, the Conference now focuses on the dissemination of information to the membership of the North Carolina Medical Society. It is sponsored by the Committee on Communications. This year's theme was "Medicine in the '80s." The JOURNAL will provide coverage and review of the Conference for the next few months. This month, the keynote speaker's address is reprinted in full.

A.A.H.

I'M a little apprehensive for I was asked to cover a broad and rather controversial subject. Several titles were mentioned, such as, "Physicians Holding Office," "How to Manage Time for Medical Practice and Politics," and "The Physician as a Leader."

I don't mean to imply by my remarks that I've been the type of leader about whom I've been asked to speak, but I suspect a good place to start is how I became involved in politics that eventually led to being governor for eight years of the 12th most populated state in the nation.

I began as county coroner. It was not that I particularly desired to be coroner, but I come from a small town of 3,500 people, a small county of 37,000, and a small county medical society of about 20. We physicians felt that the position of coroner should be filled by a physician and decided among ourselves that one of us should be available to run for the position when required.

Shortly, thereafter, my county chairman came to me and asked if I'd run for the position. I agreed to take my turn so I ran and was elected. As I served, I found that I became quite interested in state and local government. As I served and associated with state and local public officials, I found myself growling about some of the things happening *and* about some of the things *not* happening. I decided and was reminded by my colleagues, both medical and political, that if I felt that way I should become more involved.

The position of state representative for my district became vacant at the same time my tenure as coroner was completed. I decided to run for state representative.

At that time the Legislature met for only 61 calendar days every two years. I felt that even with a family of four children to feed and educate, even though at that time it was a money losing job, I could still do it



Otis R. Bowen, M.D., is a graduate of Indiana University and received his medical degree in 1942 from Indiana University School of Medicine. After completing his internship in 1943, he joined the United States Army Medical Corps and served during World War II, 1943-1946. Currently a Professor and Director of Undergraduate Family Practice Education at Indiana University School of Medicine, Dr. Bowen has held numerous political positions, including: Indiana House of Representatives, Minority Leader, 1965-1967; and Governor, State of Indiana, two terms, 1973-1981. Dr. Bowen was the first recipient of AMA's Benjamin Rush Award for outstanding contribution by a physician in citizenship and public service. He also received the Indiana Public Health Association "Merit Award" in 1971.

providing I took very short vacations. So, I ran and was elected and re-elected for seven terms. I became minority leader in my fourth term and Speaker of the House in my fifth, sixth and seventh terms.

In 1972 I decided to take the big jump and run for governor. I was elected by a record majority and in 1976 re-elected by an even bigger majority.

I believe part of my success in the elections and in my administration was the family doctor image. I certainly was not handsome, flamboyant, or an orator. But people are not necessarily looking for those traits; they are looking for someone in whom they can have confidence and trust and someone they perceive to be a problem solver.

I did convey the message that I would approach governmental problems in the same methodical manner as I did medical ones. First, make a diagnosis — what's wrong? What's the trouble? Second, outline a course of action or remedy; third, apply the remedy.

Although the campaign theme followed the "county doctor" image, it sounded questionable at first. But it caught on and was helpful. The theme was comprised of three words: "He hears you." I found that people, even during the campaign, wanted to be heard. The fact that I took the time to listen and respond made a difference, and the word spread.

Further, I was able to get people to believe — and it was no hoax — that the combination of legislative experience in leadership roles and medical knowledge was a good background from which to enter the office of governor.

This was so because about 50% of all the problems with which state government deals is public health, directly or indirectly. I suspect it is no different in your state or any other state. Let me enumerate some of these problems to show you the extent to which public health extends into government, to show you that a great deal of the budget of state government involves public health, to show you how much state government touches your lives, to point out how much government is

involved in the health care delivery system. But, perhaps more than anything else, to illustrate to you how well qualified you are to serve in public office in almost any capacity.

I might add that the state's involvement is much less than that of federal government. Local government is also involved but only insofar as the state and federal levels permit or mandate.

For example, state government is deeply involved in:

—Mental Health — one of the state's biggest spenders of tax dollars, and it is almost all health related.

—Welfare — perhaps 40% public health.

—Corrections — about 25% public health.

—The state board of health's functions are numerous and are totally public health.

—The education of doctors, nurses, dentists, pharmacists, veterinarians and various health technicians are health related.

—Other functions include malpractice insurance, licensing of health professionals, hospitals and nursing homes, occupational health & safety, inspections of nursing homes and hospitals, operation of schools for the blind, the deaf and the multiple handicapped; a veterans' home and hospital, a soldiers' and sailors' children's home, air pollution, water pollution; solid waste disposal; water, meat, dairy and egg inspection; mosquito abatement; maternal and child health programs; immunizations; traffic safety programs; rehabilitation programs and services; animal health; emergency medical services; alcohol and drug programs; dealing with the federal government on health problems.

I suspect it will get worse instead of better because of the maldistribution of health care and the increasing cost to the patient.

Like it or not, health care and health care costs have been politicized. Decisions affecting our ability as doctors to continue providing quality health care are going to be made in a political environment far

removed from doctors' offices, nursing homes and hospitals.

Because I think government plays such a big part in the health care delivery system and because I urge each of you to become involved in the political process, let's talk about the federal government and its previous plans for the medical profession. It was obviously the intent of the Johnson and Carter administrations to take it over. And that was the attitude of many congressmen during the past 50 years. Through the diligence of the medical profession and its allies and the common sense of some elected officials this was thwarted. It looks like it may have suffered a bigger setback when President Reagan was elected, but, even so, we need to be ever alert.

President Reagan said the right things in the campaign but the executive branch is just one part of the law making process. We're at the cross roads in medicine. Whatever happens during the Reagan administration in the health care field will determine how medicine is practiced for the next generation.

Good medicine no longer is the only basis on which future decisions related to health care will be made. As a matter of fact, the tendency of those pushing for national health care planning and national health insurance is to picture you and me, and all our fellow health care professionals, as greedy obstructionists trying to reap wealth from sickness. It is just not true, but we must continue to fight for our principles and avoid the image of greed and of being an obstructionist. We must try harder to give better care at an affordable cost. It will require the education of those in political power and of the public. It will require that our patients listen to, and see, our point of view. If this is not done by us, health care planning will be left exclusively to the federal government — a fact I find to be abhorrent and unacceptable.

As for cost containment, I am convinced that it can be done without getting the clumsy fingers of the federal bureaucracy deeper into it. But the feds are constantly looking down our throats and are

very carefully looking over the health care cost increases as compared to other rising costs of living. Suffice it to say there are many in high public positions who are restless and unhappy with voluntary efforts.

There are, however, over 500 categorical grant programs, many dealing with health care; I am certain, if we as physicians have input, that we can advise how overlapping and duplication can be reduced and spending curtailed without lowering quality.

Let me throw in a statement on malpractice insurance — another reason for your political involvement. This is a subject dear to my heart for we in Indiana, as a result of a 1975 law, have the best law on malpractice in the nation.

New York City physicians are paying dearly for it. Neurosurgeons in 1981 paid \$50,000 for their yearly premiums. It is scheduled to go up another 20% this year. The cure is legislative and must deal predominately with the time in which a suit can be filed and the amount for which one can be filed. Our law has a \$500,000 limit and a two year limit from time of occurrence — not from the time of discovery. In addition, we have a medical review panel which renders an opinion on the case; the opinion is admissible as evidence in court. As a result, the premiums in Indiana now run from \$725 per year for class I to \$5,798 per year for class VII. The Supreme Court of Indiana held the act to be constitutional.

Malpractice problems differ from state to state depending on many factors. For that reason it should be addressed from state to state. A federal malpractice effort would require a congressional bulldozer where perhaps a sensitive state hand is all that is required.

Let's get back to politics and your participation. Planning and preparation are necessary and important ingredients for any election year and any campaign, if you expect to win. You cannot depend on the rabbit's foot — it didn't work very well for the rabbit. Neither can you become complacent, lazy, or apathetic. Politics can be enjoyable. If

you want to enjoy it and if you want to be effective, you've got to be a participant and not a spectator.

To win an election you must plant — select — good candidates — candidates who are honest, conscientious and hard working problem solvers — candidates whose hearts are a little softer than their heads. You must fertilize and water them by helping with good organizational and financial support and by helping them gain stature. Further, you need to keep the weeds out by avoiding infighting and jealousies between the candidates and within the organization.

The type of candidates about whom I've been talking might have to be sought out and convinced to run. This is getting harder and harder because of the withering gaze constantly on those in public life. The news media — and I'm not complaining too loudly about this — seems eager to expose and decry even the most trivial foibles, feeding an almost impossible growth of popular disenchantment and expectations. Further, candidates must bare the most intimate details of their social, marital and financial lives.

I doubt that there has ever been a time in history when people have been so aware of politics and politicians as today. They realize the power that can be exerted if enough people collaborate and express their opinions at meetings and at the polls. The politician is a news-maker; he or she is the center of attention be it for good or ill; and he or she is the one on whom people do often depend.

It is a peculiar circumstance that, when a poll is taken as to which profession is trusted the most, the politician is nearly always last; the physician, nearly always first. Yet, when a poll is taken to name the most influential people, it is not the scientists, nor the educators, nor the musicians, nor the industrialists, nor the artists, nor the clergymen, but the politicians who are first.

One of the necessary jobs in a campaign is getting out the vote. The likelihood that one qualified voter will vote is subject to a lot of

ifs. Let me present the results of an interesting study to help you in getting out the vote if you are a participant and not a spectator.

John Burkhart wrote an article for the *Indianapolis Business Journal* and cited some interesting facts. He quotes from a research paper commissioned by the Connecticut Mutual Life Insurance Company entitled, "Report on American Values in the 80s: The Impact of Belief." Age, income, education, religious commitment and political philosophy are important factors in whether a qualified voter goes to the polls or not.

"41% of those 21 to 24 vote frequently in local elections compared to 80% of those 65 and over.

"The higher the income, the more likely one is to vote.

"High school graduates vote more frequently than those who do not graduate and those who go to college outdistance them both.

"The greater the religious commitment, the more frequent the voting. In fact, those with the highest commitment are nearly twice as likely to go to the polls as are those with the lowest.

"Further, conservatives vote more frequently than moderates and moderates more frequently than liberals, although the difference is small."

No one knows the value of a single vote more than I do. In 1958 in my race for state Representative I lost by four votes — one-tenth of one vote per precinct. Of course, 1958 was a bad Republican year, for even Vance Hartke won in Indiana for U.S. Senate.

There's a true story about a backwoods Indiana farmer who exercised his right to vote and by so doing set in motion a chain of events that changed the course of history. In 1844, Freeman Clark, an old farmer of Switzerland County, was seriously ill and bedfast, but he persuaded his sons to carry him over the rough country roads to the county seat so he could cast his vote.

He was determined to vote for David Kelso, his attorney, running for the state Senate. Mr. Kelso supported Clark's choice for president,

Andrew Jackson. The exertion of going to vote caused Clark's death, but Kelso was elected by one vote — Freeman Clark's.

At that time the U.S. Senators were elected by the State Legislators. In Indianapolis, the Democrats in the state Senate counted on Kelso's vote to muster a majority of one. But when a caucus was held, a majority of the party's delegation favored a man who would vote against annexation of Texas if sent to the U.S. Senate.

Senator Kelso made clear he would not vote for his party's choice, and a deadlock ensued between the Democrats and the Whigs that lasted for days. The Switzerland County Legislator remained adamant despite the enormous political pressure on him.

Finally, he made his move. Senator Kelso proposed a new candidate, Edward A. Hannigan. At the Democratic caucus he notified his colleagues that, unless they supported Hannigan, he would bolt his party and vote with the other side, sending a Whig to Washington.

The caucus ended with the Democrats resigned to the fact that they had no other choice. The Senate then elected Hannigan by a single vote — Kelso's.

The first major issue to come before the U.S. Senate after Hannigan took his seat was a proposal from President John Tyler to reconsider the Texas treaty of annexation. While sentiment in favor of Texas had been growing, approval of the treaty was in serious doubt. It was ratified, however, with the necessary two-thirds majority by only one vote — that of the new Indiana Senator.

A single vote insignificant? On just such small decisions do the destinies of nations sometimes hang.

In this sequence of events, it might well be said that the vote of a dying man from the hills of a backwoods county in southeastern Indiana — a farmer so strongly motivated to cast his ballot that he would not be denied — made Texas a state.

Not only must votes be counted, but every vote counts. The issues and the privilege and obligation of

every citizen to vote for or against them are every bit as important today.

So, as you work to get out the vote, remember these issues and the value of one vote.

A campaign cannot succeed without money. It is more expensive every year, and few candidates can afford to run on their own money. If you believe in a candidate and if you agree with his or her philosophy of government, then encourage the investment of a few dollars. Those who invest have something at stake and will work harder to win.

It is clear that you can't be involved if you don't care, and, if you don't care, your involvement is unnecessary and probably harmful. Care and contribute some of your time, talents, efforts and finances. It's good therapy for you. You can make the difference between a weak and a strong candidate's election. But, why not be a candidate or public official yourself?

Free expression of responsible ideas is our duty, especially in areas in which our experience and knowledge qualify us as experts. I know you believe in the democratic process calling for the free exchange of ideas. I know too that, in spite of critical comments to the contrary, you recognize the value of working with government for long range solutions.

The general public's image of you as a physician is that you are a leader, you are intelligent, you are educated, you are respected, you have wisdom not possessed by most others, you are influential. So who can possibly be more effective in helping shape our community's, state's, and nation's future for the better?

How can you do this? It's simple. There are three ways. I'll simply name them in order of effectiveness and importance.

First, you can be a public official — preferably an elected one, but an appointed one would be better than none. The position could be anything from library board member to legislator, governor, or president.

Secondly, if you can't be a candidate or accept an appointive position, you can work in politics in the

party of your choice as a party official or in the medical society through your PAC organization.

Thirdly, if you can't do either of these, you can help finance the party of your choice or the candidate of your choice by contributing to their campaign.

My comments will remain sterile rhetoric unless translated into specific efforts and actions to contain federal growth. I think the present Administration is trying to do this. I urge your help in areas that affect your livelihood — medicine, taxes, overregulation. That help can take many forms.

And now a word in your behalf. Besides being individuals who care, besides carrying the burden of the health and well-being of one's community, physicians also have a responsibility to themselves and to their families. Sometimes the intense desire and drive to take care of patients personally overtakes the concern for one's self and for one's family. It is understood by most people and by most spouses and children of physicians that medical practice will cause some imbalances in all of their lives. This can create disappointment, alienation and breakdown of a good relationship. Sometimes there are regrets later in life that more time was not taken to smell the roses and watch the sunsets together, as time sped by. A good marital and familial relationship contributes indirectly to better patient care. Do it for your sake, for your spouse's sake, and for your patient's sake.

The practice of medicine is basic to the continuation of mankind. The human achievements which can be made during the span of one's career are beyond the comprehension of most of us. But the skilled practice of medical science must ever be tempered with the humane and conscientious application of a deep and abiding love and concern for mankind. Without such a temperament, the practice of medicine moves from an honored profession to that of a skilled and highly paid technician.

Let me close with a quote by Helen Steiner Rice which I believe

best describes what most doctors
are really like.

“The more you give, the more
you get.

The more you laugh, the less
you fret.

The more you do unselfishly,
The more you live abundantly.

The more of everything you
share,

The more you always have to
spare.

The more you love, the more
you'll find,

That life is good, and friends are
kind.

For only what we give away,
Enriches us from day to day.”

When we contemplate the air, and the life of the animal, the emetic and the stomach, continued cold and certain fevers, we can discover no intermediate agent from which the effects produced, could, prior to experience, be inferred. The contact of the air with the lungs, of the emetic with the stomach, the appearance of frost, and their results, are all we know with regard to these phenomena. The first, the air, the emetic, and the frost, are called causes, as they produce certain phenomena, which are called effects; and as they follow them invariably, we expect the appearance of the one as the result of the operation of the other; a wise provision of nature, upon which all our operations in the regulation of our happiness is founded. Thus when a patient faints, or when life is suspended, the air is admitted more freely to facilitate recovery. When poison is taken into the stomach, an emetic is administered, or it is withdrawn by a syringe and a tube, because the qualities of the air in the resuscitation, and the emetic or the syringe and tube in discharging the contents of the stomach, are powerful; they have been and always will be the same; we therefore operate with confidence, and success attends our efforts; and this certainly depends upon the observation of the power of these respective agents to produce these certain and specific effects, and is the result of repeated experience. The essential and intimate nature of this power, however, cannot be understood. All we know of it is the observance of its general properties, and the circumstances which modify them: thus, invariable antecedence is an essential attribute of a cause, as invariable consequence is of an effect, unless some adequate agent intervene to prevent it. On the application of the finger to the blaze of a candle, pain is produced; the effect is uniform, and we avoid it ever after; and because the pain invariably follows the application of the blaze, which must as invariably precede, they possess one requisite of the relation of cause and effect. But in order to complete the relation of cause and effect, something more is necessary than mere antecedence: thus day precedes night, and night precedes day, and yet they are not the cause of each other, but both flow from the effect of the same agent, the sun; day appearing as he rises, and night succeeding as he disappears.

This something is the simple and constant observation of the effect, as the result of the cause; and it is the province of philosophy accurately to determine all those circumstances, which contribute to produce the effect, to separate those which oppose it, and to ascertain their power; so that the resources of nature may be constantly within our reach, by an accurate knowledge of their causes. Thus it is, that by commanding the causes of things, we control also their effects. The conviction of the power of a cause must be clear and decided; and it is proportioned always to the frequency of the instances in which it has been observed to produce the effect, provided there exist no collateral circumstances, to which it can also be attributed: thus, the effect of the sun in producing day has been so constantly and frequently witnessed, that it is impossible not to attribute it to that cause. When, however, a cause is observed less frequently, there will be some doubt with regard to it; and this will be in proportion to the rareness of the observations made. Thus the fevers of summer have been attributed to bad food, bad water, and to mineral effluvia; and as the system is often exposed to these agents, it is difficult to determine from observation, what is the exact power of each, or whether they have any agency, since they frequently operate on it at the same time and in union with other causes, from which they had not been completely separated. Repeated observation, however, has cleared up the difficulty. Bad food, bad water, and mineral effluvia are found not to be the causes of bilious fevers, but exhalations from putrefactive materials of a vegetable or an animal nature. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D. Vol. I, Philadelphia, Towar & Hogan, 1829.

Toxic Encounters of the Dangerous Kind

POKEWEED

Realizing it is poor form to criticize a traditional Southern culinary specialty, it is important to discuss "pokeweed" and "poke-salit" because of the toxic potential of this regional "delicacy." It may be said of this plant-as-food that one man's (or woman's) salad is another man's (or woman's) poison.

Pokeweed (*Phytolacca americana*), AKA poke, pigeonberry, or inkberry is a large weed found in moist woods, roadside ditches and damp fields primarily in the eastern half of the United States. The plant arises from a rather large root from which stout reddish-purple branched stems appear, usually reaching a height of five to six feet. The berries are purplish-black and are attached to the stalk by short stems.

Apparently, the joy in eating this "weed" is usually limited to the consumption of the young, tender leaves which are single, from four to twelve inches long, with smooth edges. It is alleged that proper preparation of the leaves or sprouts or stems involves boiling them in water and discarding the cooking water and then reboiling. Canned pokeweed leaves are sold commercially for those who get the "munchies" for this product out of season.

The problem with this "natural food" is that it contains some poisonous ingredients such as phytolaccine, triterpene saponins and a mitogen. The root is the most toxic part and to a lesser degree, the leaves, stems and berries are potentially poisonous also. The main toxic agent is phytolaccine which is a potent gastrointestinal irritant. As the plant matures the level of this toxin increases throughout the plant (for some reason the green ber-

ries are more toxic than the mature berries). Some "experts" claim the berries are edible if they are cooked. In a typical toxic encounter with pokeweed, after a delay of 2-4 hours, there can be rather profound abdominal cramps, remarkable diaphoresis, and unrelenting emesis with diarrhea somewhat later. More severe intoxications can produce dyspnea, lethargy, convulsions, dizziness and even death. Most patients recover within 24-48 hours. For adults the more common mode of intoxication occurs following the ingestion of uncooked or improperly cooked leaves in salads; the roots, also poisonous, are often mistaken for horseradish or parsnips. Preschool children are more apt to be poisoned by ingesting the colorful berries. It is often stated that 10 berries, if eaten uncooked by a preschool child, can be very toxic. There is no specific treatment or antidote; symptomatic, supportive care is the main therapeutic tool.

Those pokeweed experts who snicker at the foibles of the inexperienced must read the CDC's MMWR report of February 20, 1981,¹ about a group of campers who allegedly prepared the leaves in the standard fashion to make poke salad and became quite ill with the typical GI complaints. As for me — lettuce, onion, tomato, and Italian dressing please.

Ronald B. Mack, M.D.

Associate Professor of Pediatrics
Bowman Gray School of Medicine and
Chairman, Committee on Accidents
and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics

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Editorials

REPORT FROM WINSTON-SALEM: THE EXECUTIVE COUNCIL IN MID-WINTER

Go now, and work; for no straw shall be given you, yet you shall deliver the same of brick.

Exodus 5:18

Understanding the ebb and flow of the forces — economic, psychological, governmental — that affect our daily lives often seems beyond our reach. At times some catalytic event occurs or some charismatic leader appears which permit the generation of dynamic and constructive group feeling. The confidence which results seems to engulf obstacles and we think ourselves on the way to a truly better world. Political leaders are likely to see themselves as such human focal points, a persuasion not always shared by their fellow citizens. The public at other times tends to be more concerned with mundane matters: food, shelter, taxes, jobs, friends, vacation and so on.

To most of us today is hardly heroic but rather demands defensive posturing, cautious management and a certain degree of stoicism. For a few, perhaps younger, tomorrow holds promise not to be deferred by committees, the plight of El Salvador or the threat of a nuclear holocaust. When too many rush to either extreme, idolizing the leader or trailing off into apathy, faith and inertia may triumph over reason and many an action, sudden and on the wing, must be repented of without sufficient leisure.

If there has been a catalytic word in our times which has not engendered group feeling, it is cost, anticipated and unanticipated. It was certainly a pervading concern at the 1982 Mid-Winter Meeting of the Executive Council of our society in Winston-Salem, February 5 and 6. Under the graceful but precisely struck gavel of President Josephine E. Newell, the council first looked to its own future. In times of stress, our organization must aspire to accurate projection as guided by its Committee on Finance. Dr. Ernest B. Spangler, Chairman. In propounding their prognostications, the committee must think of predicted population and industrial growth, the undulations of the Consumer Price Index (CPI), the temper of the Federal Trade Commission and the other vagaries of government in its calculations. After such deliberations, the committee concluded that our society's expenses can be expected to increase at the rate of 10% per annum, at least until the protestations of supply-siders and monetarists are synthesized into something like effective control of inflation. Meantime membership presumably will rise by only 5% per year. Since our other sources of revenue are limited and cannot be expected to grow at even a 5% rate, annual dues must continue to rise ever so gradually because medical

societies, unlike states and nations, cannot establish record deficits and survive.

Unanticipated costs are another matter, less manageable and apparently less predictable as the outlay and the debt get bigger. If we are interested in consequences of looking into a clouded crystal ball, we need only examine health care outlays in this country in 1980. Our Federal Government spent \$70.9 billion in 1980 for health care, up 17% from 1979. This item lagged only behind National Defense and Social Security in the annual budget. Total spending for 1980 for medical care in our nation reached \$247 billion, 9.4% of the gross national product. Certainly when Medicaid, Medicare, the Kidney Program and others were begun, their costs were grossly underestimated so that they have been inadequately funded. The same certainly must be said of the more venerable Social Security system.

Not surprisingly then the council devoted considerable time to the matter of statewide Medicaid reimbursement. Here President Reagan's proposal for the nationalization of Medicaid, anti-trust implications about fixing fees to control costs and even the opaque and convoluted paragraphs of the Federal Register must be examined and reexamined. Most in attendance would agree, taking the Federal Register as an example, and paraphrasing the 18th Century English poet, dramatist and physician, Oliver Goldsmith, that when words accumulate, thoughts decay and action withers.

The problem with Medicaid is in its Pharaonic stance. Rather than bricks without straw, Medicaid underpays and demands full value at a cut rate, thus passing costs to private third-party payers and to patients. Thus efforts to cut hospital costs decrease hospital income and increase non-profit hospital deficits. Under Medicaid there is no financial incentive for improving the situation, only stimulus for more oratory and more committees. Non-profit hospitals are particularly victimized but they are called on as they have always been to offer more charity. In 1980, for example, the 327 non-federal members of the American Hospital Association's Council of Teaching Hospitals comprised 5.6% of our nation's hospitals but had 47% (\$601 million) of charity care deductions and 35% (\$1.2 billion) of bad debt deductions. (Interested readers who wish to pursue the matter are directed to Bulkeley's impressive if disheartening analysis of the predicament of the Roger Williams General Hospital, a non-profit affiliate of the Brown University Medical School in Providence, R.I., which appeared in the February 9, 1982, *Wall Street Journal*).

Little wonder then that the North Carolina Com-

mittee on Medical Cost Containment respectfully reported that it was not effective and should be discontinued. It was further suggested that a new ad hoc committee be set up to encourage investigation, publicize the problem and seek remedies such as they might be. Obviously, the new committee would have to assess our health planning, the Reagan proposal and many other facets of a very complicated process.

Any number of duly constituted and ad hoc committees might devote some thought to the effects on our system of the invasion of health care delivery by private and publicly owned corporations. Many a hospital, once the pride and unifying force of the small town, has been bought and reorganized for profit. Whether such hospital chains in the making will see fit to assume a proportionate share of responsibility for those dependent on Medicaid and other charities remains to be seen. But the experience of our teaching hospitals is not encouraging and the situation can only be expected to worsen.

Perhaps some incentives need to be built in to encourage the public as well as the private sector involved in health care delivery. Home health services suffer because hospitals can pay nurses more and public administrators often do not see fit to offer home health workers — nurses, aides, orderlies, physical therapists and so on — adequate income and fringe benefits although it has been amply demonstrated that keeping home bound patients at home is considerably cheaper financially and emotionally than hospitalizing them or exiling them to nursing homes. We need to find some mechanism to protect such public programs which do use our tax monies quite effectively.

For those familiar with the scriptural citation which introduces this report, there will remain the knowledge that a Moses did come along as a catalyst for the children of Israel. Yet from this observation post in 1982 it appears almost easier now to separate the Red Sea than to see how we can translate our own commitments to our patients and to the public at large into suitable and effective action.

J.H.F.

(For more on the Executive Council meeting see the President's Newsletter and the Committees and Organizations column.)

THE MICROCOSMIC EYE

Most physicians would agree that faith and hope are essential in patient care — to doctors as well as to patients. When the physician exhausts both the usual and the heroic means of therapy, patients still hope for the magical and the miraculous. They may deny their ailments and even come to consider the therapist as an etiologic vector. By a psychic switch responsibility for the nature of things is transferred to the individual who in treating is blamed for disrupting the delicate balance that was health.

Victims and especially their families may seek alternative diagnoses and cures, flying to far lands in search of deliverance or exploring other systems of

therapy claiming efficacy in many fields. As with Laetrile and earlier with Krebiozin, time teaches. But other forms of therapy and the expectation of new panaceas persist in the public imagination. If the ailment is not organic, good results will sometimes follow the enthusiastic embracing of such diverse modalities as cupping, foot zone therapy, the raisin cure, or rolfing. And if the process is organic, results may still be surprisingly good when conditions, such as rheumatoid arthritis or multiple sclerosis, are characterized by spontaneous remissions and relapses. When enthusiasm and coincidence collide, reputations can be made.

Because the House of Delegates of the AMA adopted at the 130th Annual Session in Chicago in June of last year Report F, Evaluation of Iridology, of the Council on Scientific Affairs, this alternative analytic technique for diagnosis should be examined. It offers an interesting example of the many such systems currently publicized by mouth, advertisement and book. The council concluded "that iridology has not yet been established as having any merit as a diagnostic procedure." Yet it is reported by Law¹ to be "very effective in the hands of a trained operator." Trained operators must be few and far between in view of the council's resolution.

What is iridology that we should be mindful of it? The practitioner of the art inspects the iris to determine the functional states of body organs which are represented in anatomically discrete regions in each iris and pupil. A specialist presumably would have to learn only that portion of the iridologic map having to do with his or her field. The right kidney is located in the right iris at about 5:40 o'clock, a.m. or p.m., and the left in the left at about 6:15. In the same zone more medially lies each adrenal and rimming the pupil are some portions of the bowel.

Alas for the amateur who would become quickly expert, the system does not work, as Simon, Worthen and Mitas² have clearly shown. Three ophthalmologists and three iridologists examined color photographs of both eyes of 148 patients, 48 with severe renal disease; neither group could tell which patients had kidney trouble.

Jensen³ tells us that there are four classifications of iridologic diagnosis, dependent on the color of the eyes. In blue eyes high (!) white and in brown eyes high yellow (!) indicate acute inflammation, while subacute inflammation is characterized by grayish white or slightly dull yellow hues in blue or brown eyes. Dark gray or very dull yellow reflect chronic conditions and black in either eye reveals degenerative or destructive processes. Color, tone, composition and form must be assessed so that the eye seems almost an art form. For those eager to learn more about iridology and other holistic systems than Law¹ provides, Kaslof³ has compiled a resource guide, complete with data about groups, organizations, centers, clinics, publications, products and services.

But why should we pursue iridology beyond the reach of everyday medical practice? Do we not as

physicians check pupillary responses, always aware of the Argyle-Robertson pupil of late syphilis, more frequent in the description than in the flesh? And do we not know that a miotic pupil may tell a tale of narcotic abuse or a dilated pupil of abuse of belladonna alkaloids? We must wonder too how an iridologist would cope with the syringomyelic patient with one blue eye and one green one, with the band keratopathy of hypercalcemia or the Lisch nodules (iris hamartomas) of neurofibromatosis?

There are behavioral implications too in knowing about pupils. Might not a person with Adie's pupils seeking sociopathically after surgery have had burr holes when the diagnosis was really Munchausen's syndrome? And don't forget the anatomic expression of the sudden — "wide-eyed with surprise!"

Pupillary dilations have also attracted experimental psychologists seeking to assess the relative contributions of diligence, efficiency and capacity to intelligence. The pupillary response, dilatory to the presentation of a problem in mental arithmetic, is less marked when the subject is smarter.⁴ The more difficult the problem, the greater the dilatation. Speculation about the roles of nature and nurture in determining such evoked responses had best be left, however, to those who need no data to reach their conclusions.

J.H.F.

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THE EARTHLY FOOT

Over 70 years ago, H. W. Fowler and his brother, F. G., began work on *A Dictionary of Modern English Usage*. F. G. died in 1918 of tuberculosis, sharing only in the planning of this commentary, and is remembered primarily in H. W.'s moving dedication.

H. W. had little tolerance for slipshod English, for sloppy or overblown constructions which he considered sins against man and community. He realized that inexact symbols were poor tools for thought and that simple and direct expression was a surer way to virtue than obfuscations, euphemisms, genteelisms and double talk. The conscientious physician of any era would appreciate Fowler's adherence to rigorous standards in the use of language because it is paralleled in medicine where standards of excellence are under constant pressure.

Floods of phrases, haphazardly or cunningly constructed, tend to dilute our standards and to displace the coordinates of our daily lives. We need only look at today's medical practice, invaded by a host of "health providers." Health is now a commodity to be provided, not a biologic state dependent on nature and nurture. As such it can be made "new and improved"

by packaging and messages. Fowler would certainly have considered many of these messages genteelisms, "the substituting for the ordinary natural word . . . of a synonym that is thought to be less soiled by the lips of the common herd . . . less vulgar, less improper, less apt to come unhandsomely betwixt the wind and our nobility." For the normal word in his day, corn-cutter, he offers as genteelism, chiropodist, the use of which dates to 1785 according to the *Oxford English Dictionary* which considers it a factitious word for corn-cutter, treater of bunions and tender of toenails.

In our era of specialization, chiropody has achieved some status as a profession. In some parts of the country it has been further dignified by the granting of hospital privileges to its practitioners. Many, even most, chiropodists are well-trained and are considerably more than corn-cutters. If a genteelism implies unearned status, we might better look at the many branches of what is termed, genteelly, wholistic, holistic or heuristic healing. This is the domain occupied by such delightful specialties as Radionics, Macrobiosis, Anthroposophical Medicine and Radiesthesia-Psionic Medicine. A publication, the *Journal of Energy Medicine* (JEM), has been established for those interested in and seeking initiation into such mysteries.

Included among 10 Oriental Approaches to Health to be covered in JEM are acupuncture, yoga, karate and reflexology. Reflexology, the least publicized and presumably the least fashionable of these four, deserves some attention if only because the psychosexual significance of milady's high heel shoes has recently been emphasized by a chiropodic researcher. Reflexology (Foot Zone Therapy) is said to be an ancient Chinese technique lately rediscovered which assumes that specific areas of the soles are involved in the function of specific organs. Thus changes in posture caused by wearing high heels would then cer-

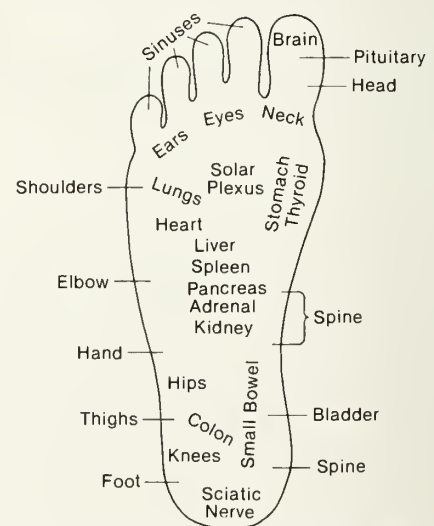


Fig. 1: Reflexologic map of the foot. Localizations seem to vary among practitioners, making for difficulty in assessing results. Note that gonads are not represented.

tainly affect the viscera, probably adversely. If such viscera are out of balance with their fellows, massage of the strategic spot ought to put things aright. The acupuncturist should be able to do the same by inserting a needle at the proper point but reflexology is easier to learn, non-invasive and considerably cheaper because you can do it yourself.

Diagnosis, at least in allopathic medicine, the variety we practice, should precede therapy. This may be one of the shortcomings of reflexology because when sensitive crystalline nodules in the soles of the feet are

not palpable, the deranged organ could be determined only with great difficulty. But the therapist can then look at the iris and find the faulty part. A map of the foot (Fig. 1) identifies areas for massage. If this sounds like some sort of foot fetish, remember that the feet of Chinese girls were bound from early childhood, that 60 years ago a lady's well-turned ankle was quite titillating and that high heels have been considered fetching since they were introduced by a Medici of the Florence Medicis.

J.H.F.

PLATO [427?-347 B.C.]

Cookery simulates the disguise of medicine, and pretends to know what food is the best for the body; and if the physician and the cook had to enter into a competition in which children were the judges, or men who had no more sense than children, as to which of them best understands the goodness or badness of food, the physician would be starved to death.

Gorgias, 465.B (tr. by Benjamin Jowett)

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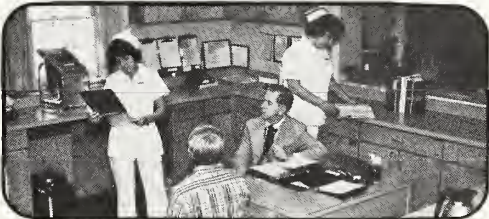


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Committees And Organizations

SUMMARY

EXECUTIVE COUNCIL

FRIDAY EVENING, FEBRUARY 5, 1982

The Executive Council, at its February 5, 1982, meeting unanimously approved a motion in keeping with a recommendation from the Committee on Finance that beginning January 1, 1983, the Society dues be increased for regular active members from \$140 to \$190; that dues for residents and interns be increased from \$10 to \$20; and dues for students be increased from \$3 to \$10.

The Executive Council also adopted a motion, following a discussion of the total amount of dues paid by members at the county, state and national level, to instruct the committee on finance to study the feasibility of paying annual dues in installments and report to the Council before January 1, 1983.

A motion was also adopted by the Executive Council instructing the committee on finance to study the feasibility of changing the fiscal year of the North Carolina Medical Society from July 1st through June 30th.

The amended budget for 1982 as presented by the chairman of the Committee on Finance was approved.

On recommendation of this committee, the Executive Council approved an additional expenditure to the amount already allocated for the purchase of word

processing equipment. Another motion also approved the expenditure of sufficient funds to purchase the appropriate photocopier machine.

The ad hoc Committee on Feasibility Study for Additional Floors to the North Carolina Medical Society Building presented a recommendation that the Executive Council recommend to the House of Delegates that the society proceed with the building of a third floor onto the headquarters building. After considerable discussion related to the desire of many council members for additional information, a motion was adopted that the recommendation be postponed definitely to the April 1982 Executive Council meeting for further discussion on the feasibility of building a third floor on the headquarters office building.

The Executive Council approved a motion that a three member Audit Committee become a standing committee of the society to serve staggered terms of three years so that one member shall be appointed by the president of the society each year to replace a member whose term is ending. The motion also included the provision that after 1982 (term of appointment ending in 1983) no member of the Audit Committee sit simultaneously on either the Committee on Personnel & Headquarters Operation or on the Committee on Finance.

(For more on the Executive Council meeting see the President's Newsletter and the Editorial column.)

JOHN MORGAN [1735-1789]

Young men ought to come well prepared for the study of Medicine, by having their minds enriched with all the aids they can receive from the languages, and the liberal arts. Latin and Greek are very necessary to be known by a Physician. The latter contains the rich original treasures of ancient medical science, and of the first parents of the healing arts. The former contains all the wealth of more modern literature. It is the vehicle of knowledge in which the learned men of every nation in Europe choose to convey their sentiments, and communicate their discoveries to the world.

A Discourse Upon the Institution of Medical Schools in America

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DESCRIPTION: Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base), white petrolatum qs, in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

INDICATIONS: *Therapeutically* (as an adjunct to systemic therapy when indicated), for bacterial infections, primary or secondary, due to susceptible organisms, as in: • infected wounds, skin grafts, surgical incisions, otitis externa • primary pyodermas (impetigo, erythema, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection. *Prophylactically*, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and promote wound healing.

CONTRAINDICATIONS: Not for use in the eyes or in the external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neo-



mycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Dtoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



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The June Budget Session: A Status Report

Charlotte Ashcraft

The General Assembly is currently scheduled to reconvene for a "short" legislative session June 2, 1982, to deal primarily with budget issues. During the last budget session in October 1981 the legislature appropriated only one year of funding for a number of programs due to the uncertainty of the economy. In order to decide which programs will continue to receive funds and which will be eliminated or reduced, the legislature plans to examine some possible budget revisions in June.

When the state's 1981-82 budget was adopted, a 10.3% growth rate was used to project the available revenues for the fiscal year. Currently, the revenues are somewhat less than the projections indicated, and the Governor has reduced state spending in order to stay within the funds available. This over-anticipation of revenues, along with the items funded for one year, will result in the General Assembly's taking another look at the state's budget for the upcoming fiscal year.

Among the issues to be discussed in June are a number of health care items. The principle item on the health agenda is the Medicaid program. The Reagan Administration proposed major reductions in Medicaid, and Congress adopted most of them. These changes resulted in a loss of \$27 million to North Carolina's Medicaid program. These cuts will automatically rise to \$41 million next year under the bill adopted by Congress (Omnibus Budget Reconciliation Act of 1981) due to the provision which reduced federal financial participation in the cost of the program. The Medicaid reductions adopted in the 1981 session, if they are continued, should be sufficient to absorb the \$41 million loss in the next year.

Charlotte Ashcraft is a Fiscal Analyst with the North Carolina General Assembly's Fiscal Research Division.

However, the Reagan Administration has submitted Congress another list of proposed Medicaid reductions for the next federal fiscal year (October 1, 1982 - September 30, 1983). If these cuts are adopted, North Carolina will lose an additional \$41.7 million from the Medicaid program, for a total loss of \$82.7 million. The following is a list of the Administration's proposals and the estimated loss to the state's Medicaid program:

PRESIDENT REAGAN'S PROPOSED MEDICAID CHANGES

- (1) Reduce the federal match by three percent for optional services and beneficiaries (such as prescription drugs, intermediate care facilities, dental services and the medically needy population--age, blind and disabled). (\$31.5 million)*
- (2) Establish co-payments for Medicaid services (\$1/out-patient visit, \$2/inpatient day).
- (3) Allow states the flexibility to recover long term care costs from beneficiary estates and relatives.
- (4) Establish a combined welfare administrative program for the states by consolidating and reducing the administrative costs for the Medicaid, AFDC, and Food Stamp programs. The states now receive 50% of whatever they spend on administrative costs. (\$1.3 million)*
- (5) Eliminate federal matching for the state Medicare "buy-in" for Medicare Supplementary Medical Insurance. (\$6 million)*
- (6) Eliminate higher federal matching rates for programs such as family planning and nursing homes inspections. (\$2.9 million)*

* These numbers represent an estimate by the Division of Medical Assistance of the total program reduction required by each proposed change.

- (7) Phase in full state financial responsibility for erroneous payments. (Federal government would not reimburse states for payment made in error in excess of 3% in 1983, 2% in 1984, 1% in 1985, and 0% in 1986.)
- (8) Shorten the automatic extension of Medicaid eligibility from 4 months to 1 month for persons losing AFDC benefits due to increased earnings.

If Congress adopts these changes in the Medicaid program, it is estimated by the Reagan Administration to result in a savings of \$2 billion in FY 1983 to the federal government.

The Department of Human Resources' Division of Medical Assistance estimates the impact of these proposed changes to be a loss of \$41.7 million in North Carolina. It would take a state-county appropriation of \$15 million to make up this shortfall and avoid a \$41.7 million cut in services or groups of eligibles for the program.

In addition to the Medicaid program, the General Assembly will address the issue of the federal block grants. Three of these are in the area of health care: Preventive Health Block Grant, Maternal and Child Health Block Grant, and the Alcohol, Drug Abuse, and Mental Health Block Grant. The legislature has decided to use the normal appropriation process to allocate the block grant funds for the upcoming fiscal year. Therefore, the Governor will propose plans for spending the money; the General Assembly will review them and make the final decision by appropriating these block grants.

The largest of the health care block grants is the Maternal and Child Health Block Grant for which North Carolina currently receives \$9.5 million. This grant funds such programs as Crippled Children, Perinatal, Lead-base Paint Poisoning, and Family Planning Services. A decision must be made on the amount each of these programs funded by the block grant will receive.

The Alcohol, Drug Abuse, and Mental Health Block Grant funding level is presently \$9 million. This grant has the least flexibility of all of the block grants since 90% of all the funds must be distributed to those programs previously receiving these funds. But a decision must be reached on the allocation of the remaining 10% discretionary funds for next year.

The state now receives \$2.3 million for the Preventive Health Block Grant, which funds programs such as Emergency Medical Services, Hypertension Control, Fluoridation, Health Education and Risk Reduction, and Health Incentive Grants to Health Departments. These different categorical programs will be competing with each other for funds under this block grant. The General Assembly will examine each program and will make the appropriation decision for this block grant.

The Reagan Administration has proposed a reduction in funds for each of these block grants starting in October. A 9% cut is requested for the Preventive Health Block Grant, an 11% cut for the Alcohol, Drug Abuse, and Mental Health Block Grant, and a 23% cut in the Maternal and Child Health Block Grant. The President has also proposed consolidating the Women, Infants, and Children (WIC) nutrition program into the Maternal and Child Health Block Grants with a reduced funding level.

To date none of the President's budget proposals have been acted upon by Congress due to the current stalemate over a total compromise budget package, including tax hikes and overall spending reductions. Unless an agreement is reached shortly, it may be safe to assume that the 1982 funding levels will be available for each of these federal health programs.

In any event, the General Assembly will reconvene in June to resolve these and other state budget decisions. The economic situation will be the key to the final outcome of this upcoming appropriations session.

From The Desk of The Managing Editor

WHAT IS NORTH CAROLINA DOING ABOUT HAZARDOUS WASTE?

What Are Hazardous Wastes?

The Resource Conservation and Recovery Act of 1976, under which hazardous substances are regulated, defines a hazardous waste as "a solid waste, or combination of solid wastes, which because of its quantity, concentration or physical, chemical or infectious characteristics may:

- cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness.

- pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed."

These waste materials can be either solids, liquids, sludges, or contained gases. A hazardous waste has at least one of four characteristics: ignitability, corrosivity, reactivity or toxicity.

Ignitable wastes, as the name indicates, catch fire easily and as a result normally are segregated from other waste materials. Fires involving hazardous substances are dangerous not only because they may generate heat and toxic smoke, but also because they can spread harmful particles over large areas. Examples: discarded organic solvents such as toluene and benzene, oils, plasticizers, some pesticides and paint and varnish removers.

Corrosive wastes are substances that erode materials and damage living tissues by chemical action. They are of particular concern to persons who haul and dispose of waste because by corroding containers they can cause leakage. Examples: alkaline cleaners, acid liquids used in etching, and wastes from battery production.

Reactive wastes may react spontaneously, react vigorously with air or water, be unstable to shock or heat, generate toxic gases, or explode. Examples: obsolete munitions and manufacturing wastes from the explosives and chemical industries.

Toxic wastes are any substance (solid, liquid, or gas) that are poisonous to living beings. If they are improperly handled, these wastes or their by-products may be released into the atmosphere to the detriment of human health, particularly through the contamination of ground water. Not all hazardous wastes are toxic, but all toxic wastes are potentially hazardous. Examples: pesticides, arsenic and cadmium, and their salts.

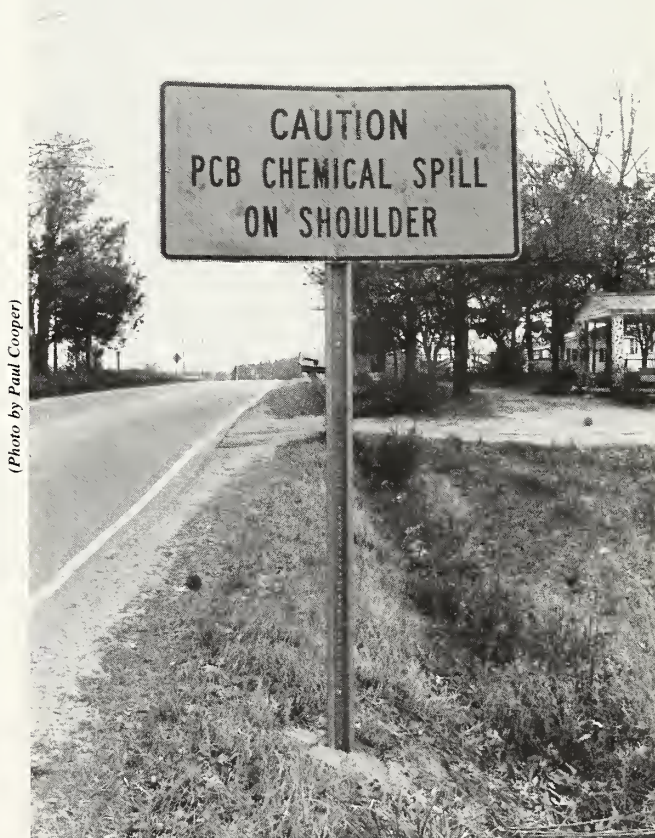
Radioactive wastes may be high- or low-level and are proved health hazards of varying degrees. As-

essment of the damages they cause is difficult and the subject of much debate. Certainly, "high-level" radioactive wastes from nuclear power plants and weapons are very dangerous. On the other hand, research labs, hospitals, educational institutions, and industry generate what is considered "low-level" radioactive waste.

Health Effects

Improper management of hazardous waste can be dangerous to the public health. However, degree of risk is difficult to determine because the toxic effects of many chemicals are unknown and may not be evident for years after exposure. While efforts continue in the research of potential health effects of hazardous waste, some are known.

Acute effects include those which result from a single exposure, as inhalation of toxic fumes or the absorption of toxins through the skin. Some common



Signs like this are found on N.C. Highway 210 in Johnston County.

acute effects are skin and eye irritation, headaches, nausea, dizziness, blurred vision, and tremors.

Some chemicals are carcinogenic in animals but there is disagreement as to risk in humans. The amount of an agent required to induce malignancy in humans is unknown.

Birth defects in animals have been found when certain chemicals have been fed to mothers, and the same might occur in humans. In fact, many cases in which exposure to a toxic chemical has resulted in birth defects have been reported. Some of these agents are mutagenic, which could pose the greatest threat in the future from mismanagement of hazardous waste.

While the human body appears to have adapted to the natural level of radioactivity from the earth and cosmic rays, many questions remain as to the amount of additional exposure that can be considered safe. And although there is much discussion on how radiation produces cancer, certain levels have been related to certain effects.

Radiation sickness:	rapid doses of 100,000 millirems to organs and intestinal tract
Cataract development:	doses over 200,000 millirems
Sterility:	doses over 300,000 millirems to the gonads
Death:	whole body doses of around 500,000 millirems when not counteracted medically can kill 50% of the people exposed in a few days or weeks

These are unlikely to be generated from current low-level waste producers, radiation in smaller doses can conceivably result in damage to unborn babies, chromosome breakage, and mutations, although no direct relationship has been proven.

Hazardous Wastes In North Carolina

In compliance with the federal Resource Conservation and Recovery Act 1,400 businesses and industries in North Carolina which generate more than 2,200 pounds of hazardous waste per month registered last year with the Environmental Protection Agency. North Carolina ranks 11th among the 50 states in the total volume of hazardous wastes. However, small generators are not yet included in the federal system set up to monitor wastes, and 120 million gallons a year are produced in the state. Although such waste is produced in all but 10 counties in our state, the Charlotte-Mecklenburg, Greensboro-High Point, and Wilmington areas generate a disproportionate amount of our total waste. (See map.)

In 1979 North Carolina ranked fourth in the United States in the production of low-level radioactive waste. At that time, 1,782,940 gallons, containing 12,158 curies of low-level radioactive waste, were produced, 20% of the total volume and over 98% of the

radioactivity of Carolina Power & Light Company's Brunswick County nuclear plant and General Electric's fuel fabrication factory near Wilmington; the remaining 10% by volume and less than 2% of the radioactivity, by research labs, hospitals, colleges and universities throughout the state.

Until recently North Carolina, having no approved facilities for the treatment and disposal of hazardous waste, relied upon other states' facilities. However, most states are now reducing the amount of waste they will accept, so each state must make efforts to manage its own. In March of this year both South Carolina and Washington, the two states which store all of North Carolina's low-level radioactive waste, began measures to restrict the amount of waste they will accept. This will impose great difficulties upon the state's hospitals and research labs and may mean the building of a local facility.

Waste Management In North Carolina: The Physician's Role

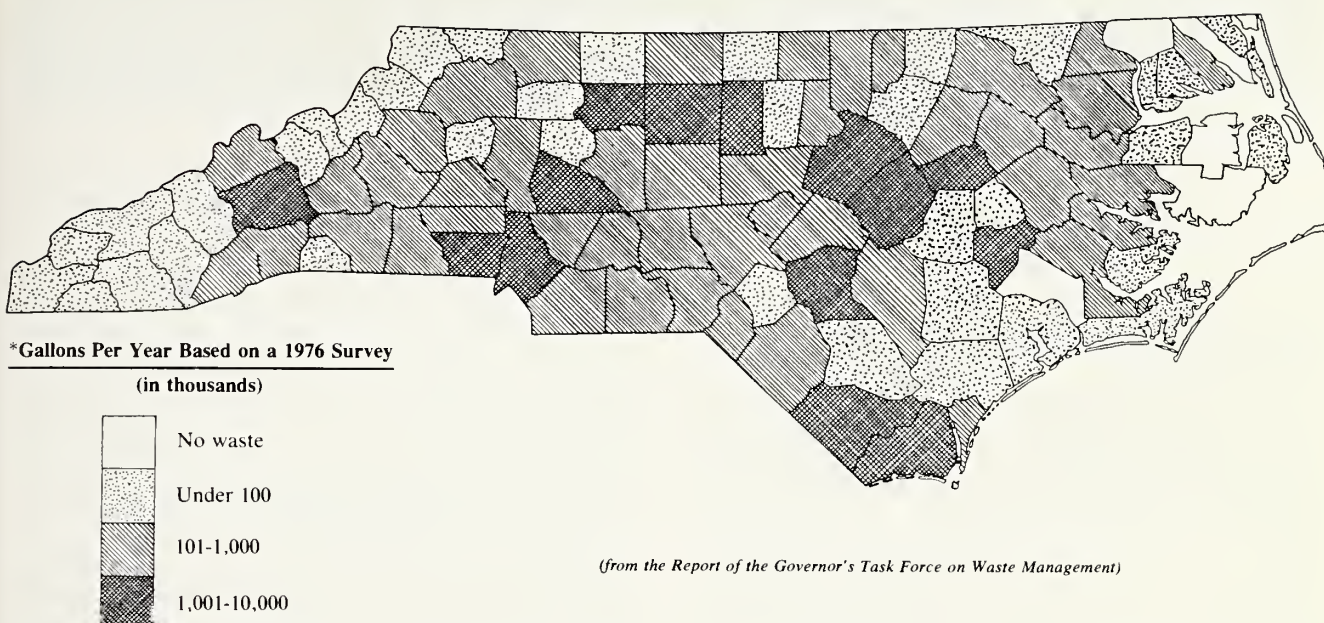
North Carolina is the first state in the nation to receive interim authority from the Environmental Protection Agency to assume its own regulatory program of granting permits for storing, treating, or disposing of hazardous wastes. This is the responsibility of the Solid and Hazardous Waste Branch in the Division of Health Services of the Department of Human Resources.

Mr. O. W. Strickland, head of the Solid and Hazardous Waste Branch, expects that a medical toxicologist will soon be on staff to help determine the potential health risks of such wastes. Mr. Strickland adds that his department and industry hope to work together to provide communities with information identifying known toxic substances, how they affect health, and how they may interact to produce or modify existing disease. Government, industry and health care personnel must also combine efforts in the development and application of emergency plans.

Complicating the issue is the fact that so little toxicity data are available. And, while the North Carolina Waste Management Act of 1981 (which mandates regulation of hazardous wastes) is considered model legislation, it does not address the problem of identifying and cleaning up existing and abandoned disposal sites. In February of this year state health officials listed 167 possible hazardous waste sites. More than 100 were unidentified before a 1980 federal law which required the reporting of waste dumps. Ron H. Levine, M.D., State Health Director, said that these sites may or may not contain hazardous wastes and that they would be inspected to determine if they should be cleaned up or monitored.

The National Toxicology Program, the (state) Toxic Substances Project, private research groups such as the Chemical Industry Institute of Toxicology, and industry itself are accumulating data. Dr. Don Huisinigh of the Toxic Substances Project reports that his group is not only compiling data but also publishing

PROJECTED CURRENT VOLUME OF HAZARDOUS WASTE GENERATED IN THE COUNTIES OF NORTH CAROLINA*



profiles of toxic chemicals and contributing to a common data base, the Chemical Substances Information Network. Dr. Huisingh noted that North Carolina is the first and only state now a part of this computer network, and that anyone seeking information on chemical substances can use the network by contacting the State Department of Human Resources.

While developing standards for the selection of sites for dumping waste is central to these programs, the status of abandoned and existing sites is also of primary concern to the public health. Upon the identification of the sites and the possible routes of contamination of populations, physicians can be expected to determine effects on health, toxicologic information, tests to recognize effects of chemicals in humans (the Love Canal incident made evident the extreme difficulty in determining who had been exposed and for how long), tests for chemical mixtures, and clinical and epidemiological studies are all necessary in the evaluation of health hazards.

As information is obtained, the question of what constitutes unreasonable risk remains. Criteria for defining health hazards, for selecting waste dump sites, and for protecting on-site workers need to be established as do procedures for the evaluation of hazardous waste management policy. In addition, with regard to emergencies and to existing and aban-

doned sites, health care professionals can help develop a registry of exposed people and devise methods for follow-up.

Reaction to the waste management problem is often highly emotional. An informed public is a responsible one. Physicians can help provide adequate information and the tools to compile the information and share this data. Although the physician's role at all levels of hazardous waste management is important, it is critical as seeker and provider of sound objective data for practical reasoning and evaluation.

A.A.H.

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In-State

May 21-22

"Sexually Transmitted Diseases"

Place: UNC School of Medicine

Info: Fred Sparling, M.D., UNC School of Medicine, Department of Bacteriology, Chapel Hill, NC 27514

May 22-23

"Respiratory Care — Breath of Spring '82"

Place: Bowman Gray School of Medicine

Fee: \$35

Credit: 9 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

May 28-30

"Laparoscopic Technique"

Place: Wrightsville Beach

Credit: 12½ hours

Info: Office of Continuing Medical Education, 231 MacNider Bldg. -202 H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2218

June 9

"Modern Care of the Heart Attack Victim"

Place: Greenville

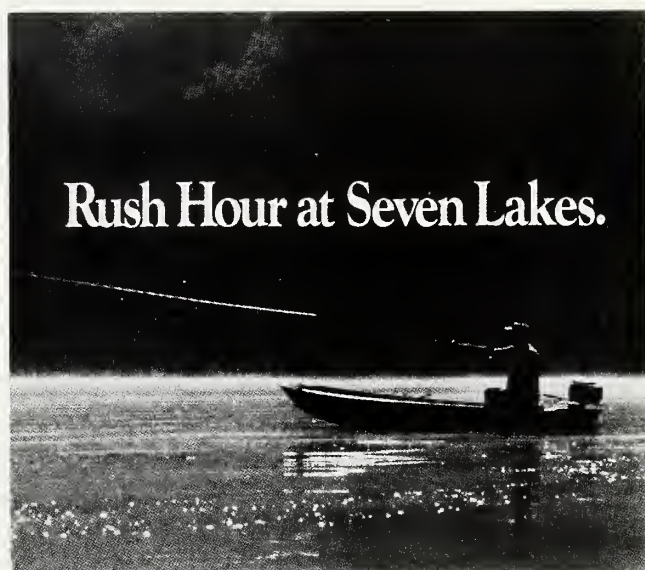
Fee: \$50

Credit: 6½ hours, AAFP applied for

Info: Edwin W. Monroe, M.D., East Carolina University School of Medicine, Box 7224, Greenville, NC 27834, 919-758-5200

What? When? Where?

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Tonsillitis and pharyngitis caused by Group A beta-hemolytic streptococci
Bronchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)
Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*
Acute exacerbation of chronic bronchitis caused by *H. influenzae**

*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings Cyclacillin should only be prescribed for the indications listed herein.

Cyclacillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclacillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclacillin is given to a nursing woman.

Adverse Reactions Oral cyclacillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclacillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See **WARNINGS**) Other less frequent adverse reactions which may occur and are reported with other penicillins are onemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclacillin is not indicated in children under 2 months of age.

Patients with Renal Failure. Cyclacillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see **DOSAGE AND ADMINISTRATION** in package insert).

Dosage (Give in equally spaced doses)

INFECTION	ADULTS	CHILDREN*
Respiratory Tract		
Tonsillitis & Pharyngitis	250 mg q.i.d.	body weight < 20 kg (44 lbs) 125 mg q.i.d. body weight > 20 kg (44 lbs) 250 mg q.i.d.
Bronchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults. †depending on severity

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otitis media†
and strep
pharyngitis†
in children

*Rapidly excreted unchanged in urine. Clinical efficacy may not always correlate with blood levels.

†Due to susceptible organisms.

1. Ginsburg CM, McCracken GH Jr, Zweighaft IC, Clahsen JC: Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother* 19:1086-1088 (June) 1981.

2. Multicenter trials. Data to be published.

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See important information on adjoining column

Wyeth Laboratories
Philadelphia, Pa 19101

June 10-11

"Sixth Annual Family Medicine Conference Day: A Presentation of Clinical and Behavioral Scholarship in Family Medicine"

Place: Chapel Hill

Credit: 6 hours (pending)

Info: Peter Curtis, M.D., Department of Family Medicine, University of North Carolina, Trailer 15-269H, Chapel Hill, NC 27514, 919-966-3385

June 17-19

"The 29th Annual Session Mountaintop Medical Assembly"

Place: Waynesville

Info: Clinton L. Border, Jr., M.D., F.A.C.S., Box 538, Waynesville, NC 28786, 704-627-9677

July 8-10

"Fourth Annual Mountain Meeting"

Place: Asheville

Fee: \$125

Credit: 12 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

July 26-30

"Diagnostic Imaging Postgraduate Course"

Place: Atlantic Beach

Fee: \$375 (\$200 if in training)

Credit: 25 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology — Box 3834, Duke University Medical Center, Durham, NC 27710

Out-of-State-Southeastern Region**May 20-22**

"The North Carolina Chapter of the American College of Surgeons"

Place: Myrtle Beach, South Carolina

Info: Richard W. Furman, M.D., 702 State Farm Road, Boone, NC 28607, 704-264-2340

May 21-22

"Current Management of Atherosclerotic Vascular Disease"

Place: Myrtle Beach, South Carolina

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

June 10-12

"Rehabilitation of the Brain-Injured Adult"

Place: Williamsburg, Virginia

Info: Ellen F. Walsh, School of Allied Health Professions, Box 233, MCV Station, Richmond, VA 23298, 804-231-9011

June 10-13

"Dermatology for Non-Dermatologists"

Place: Myrtle Beach, South Carolina

Fee: \$295

Credit: 14 hours, AAFP

Info: "Dermatology for Non-Dermatologists," Box 2987, Duke Medical Center, Durham, NC 27710, 919-684-2504

June 11-13

"Arrhythmias and Cardiac Ischemia: Diagnoses and Management"

Place: Virginia Beach, Virginia

Fee: \$245

Credit: 13 hours, Category I; 13 hours, AAFP

Info: International Medical Education Corp., 64 Inverness Drive, East, Englewood, Colo. 80112, 800-525-8651

June 14-July 8

"Ethics and Public Policy in Health Care"

Place: Charlottesville, Virginia

Info: Professions Program, Division of Fellowships and Seminars, National Endowment for the Humanities, Washington, D.C., 20506

June 23-26

"Ninth Annual Arts and Sciences of Sports Medicine"

Place: Charlottesville, Virginia

Info: Frank C. McCue, III, M.D., Box 243, University of Virginia Medical Center, Charlottesville, VA 22908, 804-924-2083

June 24-26

"American Cancer Society National Conference: The Primary Care Physician and Cancer"

Place: Washington, D.C.

Fee: none

Credit: 17½ hours, Category I; 17½ hours, AAFP

Info: Nicholas G. Bottiglieri, M.D., American Cancer Society National Conference: The Primary Care Physician and Cancer, 777 Third Avenue, New York, NY 10017

July 7-10

"Cardiology 1982: A Comprehensive Review of the Latest Techniques and Developments in the Field of Cardiology for the Practicing Cardiologist/Internist"

Place: Knoxville, Tennessee

Info: Extramural Programs Dept., American College of Cardiology, 911 Old Georgetown Road, Bethesda, MD 20014

July 12-14

"Clinical Gastroenterology"

Place: Hilton Head, South Carolina

Fee: \$200

Credit: 12 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

July 27-31

"Fifth Annual Symposium on Contemporary Clinical Neurology"

Place: Hilton Head Island, South Carolina

Info: Mrs. Joan Sullivan, Dept. of Neurology, Vanderbilt University School of Medicine, Nashville, TN 37212

August 2-7

"Tenth Annual Beach Workshop"

Place: Myrtle Beach, South Carolina

Fee: \$175

Credit: 20 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

August 13-14

"EKG Interpretation and Arrhythmia Management"


Place: Nashville, Tennessee

Fee: \$245


Credit: 13 hours, Category I; 13 hours, AAFP

Info: IMEC, Division of Postgraduate Education, 64 Inverness Drive East, Englewood, Colo 80112, 800-525-8651

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing




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should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh, NC 27611, two months prior to the month in which they are to appear. A "request for listing" form is available upon request.

News Notes

University of N.C. School of Medicine And N.C. Memorial Hospital

A unique arrangement has been established between Lakeview Manor, a nursing home in Chapel Hill, and the Department of Family Medicine.

Dr. Philip Sloane, assistant professor of family medicine, has assumed the responsibilities of medical

director for Lakeview Manor, an intermediate care nursing home, and will oversee the care for all of the facility's patients. In addition, individual faculty members and residents from the Department of Family Medicine will serve as personal physicians for new nursing home patients.

"The arrangement should have benefits for both Lakeview Manor and the Department of Family Medicine," Sloane said. He explained that faculty and residents from the department will visit Lakeview Manor every Friday morning to check on patients; a member of the Department of Family Medicine will be on call 24 hours a day.

If a resident of Lakeview Manor requires hospitalization at North Carolina Memorial, he or she can be cared for by the same physician who was responsible for the patient's care at Lakeview.

"We are very pleased with this arrangement," said J. G. Ciatko Jr., administrator of Lakeview Manor. "It's rather unique to have a physician in your facility

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every Friday when Medicaid regulations say they only need to be here every 60 days," he continued.

"Nursing homes are a much misunderstood element of our health care system," Sloane said.

There are now more nursing home beds than hospital beds in the United States and more than 20% of the elderly will spend some time in a nursing home.

"In North Carolina, nursing homes are a major provider of institutional care, with more than 40% of Medicaid funds going to nursing home patients," he continued. "In spite of these facts, educational activities in nursing homes are relatively new."

Both Sloane and Cikatko agreed that being able to use Lakeview Manor as a clinical site for teaching medical students and residents is an important way of exposing them to geriatric medicine and of demonstrating the special needs of institutionalized elderly.

Sloane has been a faculty member at the University since 1979. He has written several articles about nursing homes and was a member of the task force on geriatric education of the Society of Teachers of Family Medicine.

Scientists at the University of North Carolina at Chapel Hill have found new evidence that oral con-

traceptives that contain progestin hormones in addition to estrogen can help protect women from cancer of the uterus lining.

Their study shows that women who don't use combination product oral contraceptives have at least twice the risk of developing endometrial cancer as those who do.

The protective effect of the contraceptives increases the longer they are used and decreases over time once they have been discontinued, according to the report.

Authors of the study are Drs. Barbara S. Hulka, Lloyd E. Chambless and Bernard G. Greenberg of the UNC School of Public Health and Drs. David G. Kaufman and Wesley C. Fowler of the School of Medicine.

Dr. Hulka, a professor of epidemiology, said the findings do not mean that women should begin taking these oral contraceptives in hope of avoiding endometrial cancer.

"Because endometrial cancer is even less than the uncommon side effect of oral contraceptives which is the occasional formation of blood clots," she explained. "Normally, this cancer is a disease of older women after they have stopped menstruating."

Instead, she said the results support the belief of



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some scientists that progestin hormones should be a part of any estrogen replacement therapy during or following menopause.

Estrogens are frequently prescribed for menopausal and post-menopausal women to control such disturbing symptoms as hot flashes and depression. But both doctors and patients have been concerned about recent reports linking estrogen with an increased risk of endometrial cancer.

“With all the publicity about this link and the appropriate concern that has followed, there may be a tendency for people to suspect that any kind of hormone might be harmful.” Dr. Hulka said. “But here we have shown that progestin actually has a protective effect on the lining of the uterus.”

The study involved comparing information from 79 patients who had had endometrial cancer with information from 203 women who had not.

Overall, 15.3% of the control subjects had used oral contraceptives that included progestin for at least six

months, but only 6.3% of the cancer patients had used similar products for the same period.

Analysis of the data, which were collected over seven years, also showed that oral contraceptives composed predominantly of progestin were more protective than compounds that were predominantly estrogens.

Five members of the university community have been elected fellows of the American Association for the Advancement of Science, including the chancellor and three other members of the School of Medicine faculty.

Elected fellows in January were: Chancellor Christopher C. Fordham III, also professor of medicine and social and administrative medicine; Dr. Stuart Bondurant, dean of the School of Medicine and professor of medicine; Dr. Carl W. Gottschalk, Kenan professor of medicine and physiology; Dr. Cecil G.

in 1977, when
the Veterans Administration
compared Step-2
regimens in 450 mild
hypertensive patients,
which regimen was
proven most effective?'



Sheps, Taylor Grandy Distinguished professor of social and administrative medicine and professor of family medicine, and Dr. John M. Dennison, professor of geology.

The AAAS, formed in 1848, is the nation's largest general scientific organization. Members of the AAAS nominated for fellowships are described as those "whose efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished."

Fordham, a UNC-CH alumnus, first joined the UNC-CH faculty in 1958 and was vice chancellor for health affairs before becoming the University's sixth chancellor in 1980. He also is former dean of the UNC-CH School of Medicine.

Fordham is a member of numerous professional organizations and in 1981 was honored with distinguished service awards from both the N.C. Hospital Association and the N.C. Academy of General Dentistry.

Bondurant, a UNC-CH alumnus, joined the faculty in 1979 as dean of the School of Medicine. In 1981 Bondurant was among nine physicians named masters of the American College of Physicians, and also was named a fellow to the Royal Academy of Physicians (Edinburgh).

He is past president of the ACP (1980-81) and past chairman of the Council of Deans (1979-80).

Gottschalk, a member of the School of Medicine faculty since 1952, is one of the world's foremost kidney researchers. He has been influential in national

planning for dialysis and kidney transplants and is internationally known for the development of micro-puncture techniques that have shed light on how the kidney functions.

He was named a career investigator by the American Heart Association in 1961 and a Kenan professor in 1969. He was elected to the National Academy of Sciences in 1975.

Sheps first joined the faculty in 1947. After an absence of 15 years, he returned in 1968 to become the first director of the UNC-CH Health Services Research Center and, in 1971, was named vice chancellor for health sciences.

Sheps' research interests are in primary health care, reform in health education and evaluation of health care programs. This year, he received a special citation from the new medical school at Ben Gurion University in Israel for his work as a consultant to the school.

Dennison, a member of the UNC-CH geology faculty since 1967, specializes in stratigraphy and geostatistics. His current work involves exploring the Blue Ridge and Great Smoky Mountains for natural gas.

W. Bonner Guilford, assistant professor of radiology, was invited to speak at the Diabetes Research and Training Center, University of Virginia, Jan. 18. The title of his seminar was "Monckberg's Sclerosis: Possible role in the development of peripheral microangiopathy in diabetes mellitus."

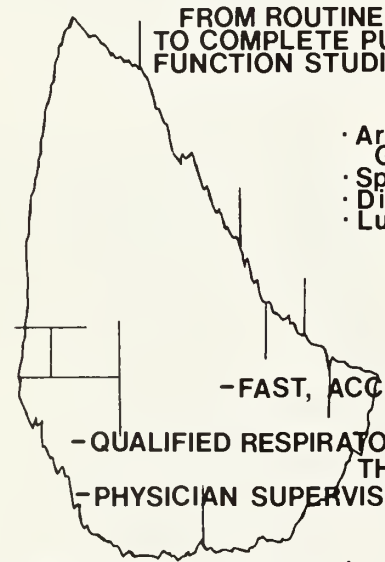
Frank C. Wilson, professor of surgery, Walter Greene, associate professor of surgery and Campbell McMillan, professor of pediatrics, lectured at the meeting of the American Academy of Orthopaedic Surgeons in New Orleans on "The Management of Musculo-skeletal Problems in Hemophilia." Wilson, Greene and William Anderson, a resident in orthopaedics, also presented a paper and an exhibit on "Fractures of the Diaphysis of the Radius and Ulna in Adults," Jan. 19-26.

William McCartney, associate professor of radiology, attended the 8th annual meeting and nuclear medicine educational seminar sponsored by the American College of Nuclear Physicians. He was appointed chairman of the awards committee and participated as a delegate in the ACNP House of Delegates.

John J. Aluise, lecturer in family medicine, presented a medical practice management workshop for physicians and their spouses. Topics included were: preparations for the first year of practice, personnel management, financial management, patient-staff-physician relationships, stress in the professional

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family, telephone communication and leadership and supervision in the practice, at Creighton University, on Jan. 29-30.

James N. Hayward, professor of neurology, was an invited speaker at the Gordon Research Conference on Cardiovascular Role of Brain Angiotensin and other Peptide Hormones, Feb. 8-12, in Ventura, Calif.

Phil Webster, professor of pathology, spoke at the family medicine grand rounds at St. Elizabeth Hospital Medical Center. His topic was "Head and Neck Oncology: an Interface," March 19, in Youngstown, Ohio.

Helen Cronenberger, associate professor of medical allied health professions, recently wrote a chapter

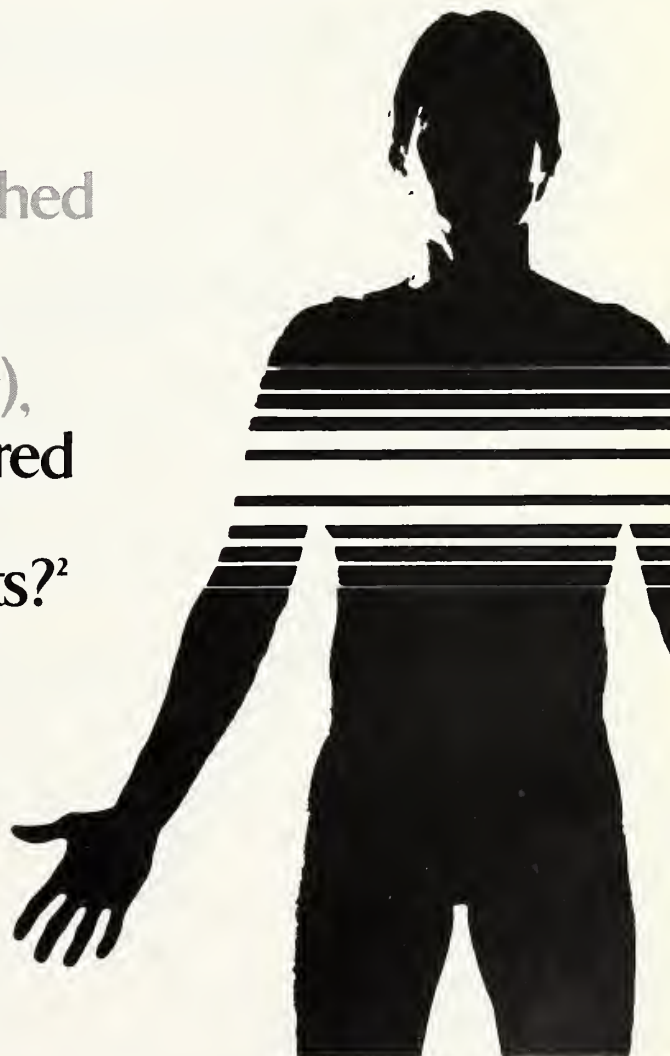
for a book titled, "Clinical Laboratory Science Education," published by the American Society for Medical Technology.

Henry R. Lesesne, associate professor of medicine, was a member of the program faculty at the Third International Symposium on Continuing Medical Education, Feb. 23-March 4, in Limuru, Kenya.

Betty E. Cogswell, associate professor of family medicine, has been elected First Vice President of the Committee on Family Research of the International Sociological Association to serve a four year term from 1982-86.

John A. Ewing, professor of psychiatry, has been named vice chairman and a trustee of the Mary Cullen

1979, when results were published
for the five-year, 10,000-patient
Hypertension Detection and
Follow-up Program (HDFP study),
which Step-2 regimen was preferred
and was deemed effective
without significant adverse effects?²



Research Trust, a non-profit foundation devoted to studies in the causes of alcoholism.

David E. Millhorn, instructor in physiology, has recently been named an Established Investigator of the American Heart Association (1982-1987). The award was given for his research on "the role of the ventral medulla in the regulation of respiration and cardiovascular function."

East Carolina University School of Medicine

Dr. Dennis R. Sinar, associate professor of medicine, has received a \$58,581 grant from Hoffman-LaRoche, Inc. to study "The Effects of Ro 21-6937 (tri-methyldesoxy PGE₂) on the Healing of Endoscopically-Proven Duodenal Ulcers — A Single-Blind Parallel Study." The project will investigate the medication's effect on acid secretions in patients with duodenal ulcers.

A memorial fund to support an annual lecture at the East Carolina University School of Medicine has been

established by Mrs. Vincent P. Fagan Jr. of Greenville.

The Vincent P. Fagan Jr. Memorial Lecture will be presented by a prominent authority in medicine on recent advances in medical science and new clinical applications.

The selection of the speaker will reflect Mrs. Fagan's request to emphasize advances in the diagnosis and treatment of aneurysms in view of her husband's death from a ruptured cerebral aneurysm.

"We are grateful to Mrs. Fagan for this special reason for bringing medical leaders to the school," said medical school Dean William E. Laupus.

"Our faculty, residents and students, as well as physicians throughout the region, will appreciate her generosity and thoughtfulness in the years to come as the lecture becomes a prominent annual event at the school. We are pleased to be a part of her memorial effort."

Laupus also recognized Greenville attorney Phillip R. Dixon for assisting Mrs. Fagan and the medical school in the establishment of the fund.

The topic and speaker for the Fagan Lecture will be selected by a committee appointed by Dean Laupus. It will be the featured lecture at one of the school's continuing medical education programs.

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Two members of the Department of Pediatrics presented an evaluation of neonatal stabilization at the Ninth Annual Southern Perinatal Association Meeting held recently in New Orleans.

Drs. Arthur E. Kopelman, professor, and Stephen Engelke, assistant professor, presented "Evaluation of Neonatal Stabilization at Community Hospitals and of a Regional Transport Program."

In addition, Kopelman authored a chapter titled "Care of the High Risk Neonate" which appears in the book *Current Therapy*. The book is edited by Dr. Howard F. Conn.

Dr. Irvin L. Blose, professor of psychiatric medicine, attended the American Medical Society on Alcoholism's meeting in West Palm Beach, Fla., on February 19. Blose presented "The Professionals and Chemical Dependency" to the society.

The Department of Pediatrics' Humanities Section has received \$13,433 in matching funds from the N.C. Humanities Committee to sponsor a symposium in March 1983. The symposium, titled "Moral Choice and Medical Crisis," will examine the competence, consent and allocation of resources in critical care medicine.

Two new faculty members have joined the School of Medicine's Department of Family Medicine.

Dr. Harold Kallman has been appointed professor and director of geriatric training at the medical school's Eastern Carolina Family Practice Center. He formerly was associate clinical professor of family medicine at the College of Medicine and Dentistry-Rutgers with responsibility for the Rutgers geriatric program. A native of New York, Kallman was also in group family practice in Edison, N.J. Kallman is a

In 1980, when the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure published their recommendations, which Step-2 regimen best met their criteria for effectiveness, safety, simplicity of titration, convenience, and economy?³



charter fellow of the American Academy of Family Physicians and has served on numerous committees on aging, mental health and medical education. He is a past president of the New Jersey Academy of Family Practice.

He received his undergraduate degree from City College of New York and his medical degree from New York University College of Medicine. He completed residency training at Kings County Hospital, Brooklyn, N.Y., and the U.S. Naval Hospital, Key West, Fla. He also completed a fellowship in cardiology sponsored by the National Institutes of Health.

Dr. Charles H. Duckett also has joined the Department of Family Medicine as professor and director of graduate education. Prior to his appointment at East Carolina University, Duckett was associate professor of family medicine and director of the family practice residency program at the Bowman Gray School of Medicine.

A native of Canton, N.C., Duckett received his

undergraduate degree from Wake Forest College and his medical degree from Bowman Gray. He completed postgraduate training at the University of Virginia Hospital, Charlottesville.

Also a charter fellow of the American Academy of Family Physicians, Duckett was in private practice for 17 years in Canton. He has held numerous leadership positions in the N.C. Academy of Family Physicians, including president of the group. He is past president of the academy's board of directors.

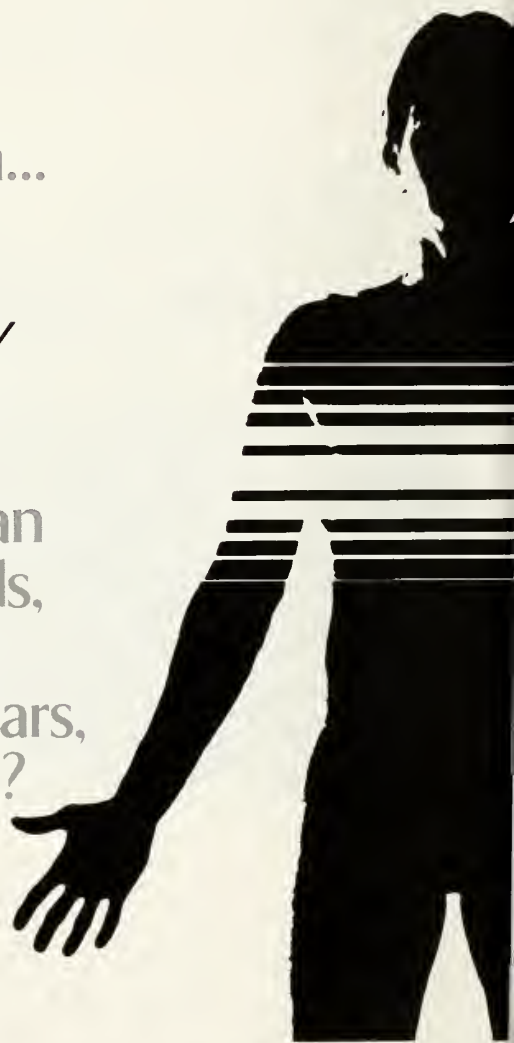
An article written by Dr. Richard S. Marx, assistant professor of medicine, appears in the January issue of the *American Journal of Diseases of Children*. The article is "Serological Evidence of Previous Rocky Mountain Spotted Fever in Sixth Graders."

In addition, Marx has been appointed principal investigator of an "Open Study of Mezlocillin in the Treatment of Patients with Serious Infection." The

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\$5,000 grant was provided by Miles Laboratories. Dr. Peter B. Campbell, associate professor of medicine, is co-investigator with Marx on the study.

“Construction and Enzymatic Selection of Bacteriophage G-4 Genomes with Modified J-F Intercistron Regions” is the topic of a poster presentation made by Dr. Uwe R. Müller, assistant professor of microbiology, at the Annual Congress on Recombinant DNA Research. The conference was held in Los Angeles February 14-17.

Dr. David R. Garriss, assistant professor of anatomy, recently was a seminar leader at the Department of Reproductive Biology, Obstetrics and Gynecology at Case Western Reserve University School of Medicine. The topic of the seminar was “Uterine Blood

Flow and the Regulation of Intrauterine Growth of the Guinea Pig Fetal-Placental Unit.”

Garris also has published several articles. “Body Weight Related Changes in Ovarian Blood Flow in the Pseudopregnant Rat” appears in the January issue of *IRCS Medical Science* and is co-authored by Dr. Irvin E. Lawrence, professor of anatomy. “Depopulation of the Ventromedial Hypothalamic Nucleus in the Diabetic Chinese Hamster” appears in the February *ACTA Neuropathologica* and is co-authored by Dr. Arthur R. Diani, assistant professor of anatomy, and Carol Smith, research technician. “Effects of Uterine Blood Flow in the Rat and Guinea Pig: Correlation with Serum Progesterone Levels” appears in the February *IRCS Medical Science*.

Dr. Zubie W. Metcalf, director of the Center for Student Opportunities, has been appointed to the

And there's more proof on the way!

1982 will see the completion of the Multiple Risk Factor Intervention Trial (MRFIT)—a six-year, 12,000-patient study assessing the factors that increase risk of cardiovascular disease. For the management of hypertension, the preferred Step-2 regimen in this study is reserpine-thiazide.

In 1978, in a preliminary report presented to the Epidemiology Section of the American Heart Association (Dallas, Nov 1978), after 12 months of the trial, fewer patients (5.3%) treated with reserpine suffered depression than even the untreated control group (7.7%)!

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11/81

Health Careers Opportunity Program Peer Review Committee of the Health Resources Administration, Department of Health and Human Services. The committee reviews grant applications for programs designed to recruit disadvantaged students to health professions programs.

Three School of Medicine physicians have collaborated on a paper which appears in the January issue of the *American Journal of Obstetrics and Gynecology*. "Persistent Hemoglobin-S in Donor Blood May Give Falsely Elevated Acid-Elution Tests in a Rh-negative Patient" was co-authored by Drs. E. M. Stropnick and Jarlath M. MacKenna, from the department of obstetrics and gynecology, and Ernest W. Larkin, from pathology and laboratory medicine.

In addition, MacKenna has received \$22,050 from the National Foundation-March of Dimes to continue funding for a perinatal social worker.

Dr. Yash P. Kataria, associate professor of medicine, is a contributing author on an article appearing in the December issue of *Leprosy Review*. The article is titled "Kveim Test in Leprosy: A Clinical and Histopathological Evaluation."

Kataria collaborated with Department of Medicine

faculty members Drs. Robert A. Shaw, assistant professor, and Peter B. Campbell, associate professor, on "Sarcoidosis: An Overview II." The article appears in the spring issue of *Clinical Notes on Respiratory Diseases* and is published by the American Thoracic Society-Medical Section of the American Lung Association.

Dr. Robert A. Shaw, assistant professor of medicine, co-authored an article which appears in the December 1981 issue of *Chest*. The article is titled "A Perplexing Case of Hilar Adenopathy."

Dr. Theodore Kushnick, professor of pediatrics and director of the Developmental Evaluation Clinic, co-authored an article titled "Genetic Counseling in Prenatally Diagnosed Trisomy 18 and 21: Psychosocial Aspects." The article appears in the January 1982 issue of *Pediatrics*.

Duke University Medical Center

Duke University Medical Center's first chief of urology died at home Feb. 1 after a myocardial infarction. Dr. Edwin P. Alyea, 83, retired from Duke as a

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Brief Summary of Prescribing Information (12) 10/27/78

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WARNING

This fixed combination drug is not indicated for initial therapy of hypertension. Hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension is not static, but must be reevaluated as conditions in each patient warrant.

CONTRAINDICATIONS

Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or

without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy

Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia

(especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

professor emeritus in 1969. He was chief of the division of urology for 33 years.

Alyea graduated from Princeton in 1919 and from Johns Hopkins School of Medicine in 1923. He trained at Hopkins until he accepted an appointment as the first chief of urology at Duke in 1929. He was named professor of urology in 1942.

One of the early innovators of prostatic surgery, he helped develop the transurethral resection. He was among the early investigators of sulfonamides in treatment of urinary tract infections and the cystoscopic multiple catheter method or ureteral stone extraction.

While Alyea was chief of the urology division, 35 residents completed urology training at Duke. In 1964, those residents honored him by establishing the Edwin P. Alyea Visiting Professorship in Urology. In 1974, Duke's urologic clinic was renamed to honor Alyea.

A Duke University Medical Center gynecologist says there's an increase of women seeking to have their sterility operations reversed.

"Unequivocally, we're seeing more candidates for sterilization than we did five years ago," said Dr. Arthur F. Haney, associate professor of obstetrics and gynecology. "I think now more women are be-

coming aware that reversal is a possibility, and they have a fairly good chance of being successful."

"The high divorce rate in this country appears to be the major contributing factor to the increasing number of women seeking reversals," he said.

"The majority of women come to me for a reversal because they've remarried and want to have a child by their second husband," he said. "Many factors have worked together to give us a large population of young sterilized women, including controversy over the side effects of the pill and the IUD. Surgical sterilization has thus become a frequent alternative for large numbers of young women."

The gynecologist, who has performed about 150 sterilization reversal operations, said Duke surgeons have experienced "about a 50% success rate overall." "Some categories of women who've been sterilized have a much higher chance of success at reversal, and some much lower," he said, "depending on the type of procedure they originally had and the length of fallopian tube remaining."

A fund has been established at Duke to honor Dr. Roy T. Parker, a distinguished obstetrician and gynecologist at the medical center.

Parker relinquished the chairmanship of Duke's Department of Obstetrics and Gynecology in Sep-

ADVERSE REACTIONS

Hydroflumethiazide

Skin-rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation.

Reserpine

Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares.

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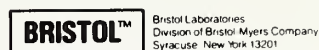
1 tablet b.i.d.

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Bottles of 100 and 1000 scored 50 mg. tablets.

References:

1. Propranolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
2. Five-year findings of the hypertension detection and follow-up program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. Hypertension Detection and Follow-up Program Cooperative Group. *JAMA* 242:2562-2571, 1979.
3. The 1980 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Intern Med* 140:1280-1285, 1980.



tember, 1980 after 16 years service. He continues as an active professor in the department.

"This fund honors a man who has excelled as a teacher, physician and administrator," said Dr. Charles B. Hammond, present department chairman. "The fund will be used to augment education and research efforts in obstetrics and gynecology."

A native of eastern North Carolina, Parker served his residency at Duke from 1946 to 1947. He also completed fellowships in pathology and endocrinology. He was appointed assistant professor at Duke in 1955 and rose through the ranks to full professor in 1963. He was appointed chairman of the department in 1964. In 1970 he became the first recipient of the F. Bayard Carter Distinguished Professorship, which he still retains.

Hammond said starter money for the Parker Fund has already been received from many of Parker's friends, former trainees and Duke faculty members. Eventually the fund will support a full professorship in Parker's honor.

An assistant professor of cardiology at Duke, Dr. Edward Pritchett, has been appointed director of the medical center's Clinical Research Unit (CRU)

housed on Rankin Ward. The research facility, funded by the National Institutes of Health Division of Research Resources, is the second largest in the country.

"It's an outstanding facility for Duke as a place to do research and improve the quality of patient care," Pritchett said. "Research in the CRU has an immediate impact on how medicine is practiced in the future."

The research unit was the first of eight general clinical research centers established by the federal government in 1961. Many now commonplace medical procedures were first tested in Rankin. It was on Rankin that the first tissue typing for kidney transplants took place, and there also that Duke neurosurgeon Dr. Blaine Nashold implanted the first bladder stimulator in a paraplegic in 1970. The early work on Wolff-Parkinson-White Syndrome — in which surgeon Will Sealy and cardiologists Andrew Wallace and subsequently, John Gallagher collaborated — also was done on Rankin patients.

Pritchett received his medical degree from Ohio State University and came to Duke as a cardiology fellow in 1974. He was appointed to the Duke staff in 1977. He succeeds Dr. Samuel Wells, who left last fall to become Bixby Professor and Chairman of Surgery at Washington University-Barnes Hospital.

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ACTIVE MEDICAL STAFF — December, 1981

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Morgan E. Scott, M.D.
Don L. Weston, M.D.
Davis G. Garrett, M.D.
D. Wilfred Abse, M.D.
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- Vasodilation occasionally causes facial flushing which can be minimized by recommending that Ru-Vert[®] be taken following meals or with food.

Dosage

- One or two tablets three times a day

Please see next page for a summary of prescribing information

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Pentylenetetrazol	25.0 mg
Pheniramine maleate	12.5 mg
Nicotinic acid	50.0 mg

INDICATIONS: Ru-Vert is indicated as an adjunct therapy in the symptomatic treatment of acute or chronic vertigo.

CONTRAINDICATIONS: Convulsive disorders or known history of sensitivity to any of the listed active ingredients. Because of the vasodilating action of nicotinic acid, Ru-Vert should not be used in patients with hypotension.

WARNINGS: The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

PRECAUTIONS: Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of Ru-Vert who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

Pheniramine maleate, like other antihistamines, may produce sedative side effects in certain patients.

Transient vasodilatation due to rapid absorption of nicotinic acid may produce facial flushing and a sensation of warmth. These effects may be ameliorated by recommending that Ru-Vert be taken following meals or with food.

ADVERSE REACTIONS: Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

DRUG ABUSE: Drug dependence has not been reported with Ru-Vert.

OVERDOSAGE: Signs and symptoms of acute overdose may be due primarily from overstimulation of the central nervous system and from excessive vasodilatation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage.

Intensive care must be provided to maintain adequate circulation and respiratory exchange.

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This drug is not for use in children under 12 years of age.

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Bottles of 300 tablets

Federal law prohibits dispensing without prescription.

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Duke neurologist Dr. Barrie J. Hurwitz and psychologist Dr. Richard Surwit talked about "Headaches — Causes and Relief" at a Health Night Out lecture Feb. 2 at the medical center. About 250 people attended the lecture, the sixteenth in a series of free programs sponsored by the medical center's public relations office.

Headaches are very common, according to neurologist Hurwitz, and create discomfort and disability to the patient but don't often involve serious disease. Hurwitz said that probably less than 10% of headaches indicate serious illness such as tumors or the onset of a stroke.

Surwit discussed another common headache, the muscle contraction headache or tension headaches, and a different approach to treatment.

"A reliable, relatively quick, economic way to correct the severe muscle contraction headaches is through biofeedback and relaxation therapy," Surwit said. After demonstrating how biofeedback works, Surwit pointed out there is a definite relationship between stress of tension and the frequency and intensity of contraction headaches.

A noted sociologist from Duke University's Center for the study of aging, Dr. Erdman Palmore, has received an award for a paper on retirement.

Palmore, who has been studying what he calls "successful aging" since his affiliation with Duke University in 1967, was selected to receive the 1982 Scholarly Paper Award of the Association for Gerontology in Higher Education. Palmore's paper is, "Preparation for Retirement: the Impact of Pre-retirement Programs on Retirement and Leisure."

He received a citation at the association's presidential banquet Feb. 12. Palmore presented the paper at an educational meeting of the association Feb. 13. His paper will also be published in a book, *Life After Work*, edited by Nancy J. Osgood.

Palmore is professor of medical sociology in the medical center's Department of Psychiatry. He is author or co-author of more than 60 articles and seven books on aging. Palmore is best known in his field for developing the innovative Duke Longitudinal Studies, in which individuals were interviewed regularly from the age of 60 until their deaths. He is currently researching mental illness among the very old and the antecedents and consequences of retirement.

Jacob J. Blum, James B. Duke professor of physiology, received a \$19,717 research grant from the National Institute of Child Health and Human Development to study "Control Metabolism in Tetrahymena."

Benjamin Mark in the Department of Medicine was awarded a 1981 Merritt-Putnam Clinical Research Fellowship from the Epilepsy Foundation of America. The fellowship, supported by funds from Parke-Davis, is for \$18,000.

D. Bernard Amos, professor of immunology and experimental surgery, received a \$229,611 research grant from the National Institute of Allergy and Infectious Disease to further his study of human HLA and mouse H-2 antigens.

Nell B. Cant, assistant professor in the Department of Anatomy, received a research grant of \$9,661 from the Deafness Research Foundation. Cant's project is "Organization of the Cochlear Input to the Small Cells in the Ventral Cochlear Nucleus."

Nels C. Anderson Jr., associate professor in the Department of Physiology, received a \$37,212 grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. Anderson's research project is "Biophysical Analysis of Single Smooth Muscle Cells."

Dr. Ara Y. Tourian, associate professor in the division of neurology, received a \$78,262 grant from the National Institute of Neurological and Communication Disorders and Stroke. The title of his project is "Huntington's Chorea: Studies of Protein Glycosylation."

Robert E. Webster, professor of biochemistry, received a \$65,544 research grant from the National Institute of General Medical Sciences to study "Biosynthesis of a Membrane Protein."

James A. Blumenthal, assistant professor in the division of medical psychology, received a \$30,904 new investigator research award from the National Heart, Lung and Blood Institute. Blumenthal is studying "Behavioral Components of the Type A Behavior Pattern."

Paul M. Conn, assistant professor in the Department of Pharmacology, received a research grant of \$45,425 from the National Institute of Aging. Conn is studying regulation of the gonadotrope during aging.

James N. Davis, professor of neurology and associate professor of pharmacology, received a specialized research center award of \$363,712 from the National Institute of Neurological and Communicative Disorders and Stroke for the Duke-VA Center for Cerebrovascular Research.

Dennis B. Amos, professor of immunology and experimental surgery received a \$141,688 research grant from the National Cancer Institute to study "Cellular Immunity and Regulatory Factors in Cancer."

John C. Cambier, assistant professor of immunology, received a development award of \$36,480 from the National Institute of Allergy and Infectious Diseases to study the molecular biology of B cell tolerance.

Hillel S. Koren, associate medical research professor in the division of immunology, received a \$77,004 research grant from the National Cancer Institute. Koren is studying "Human Natural Killing: Regulation and Recognition."

David C. Deubner, assistant professor of community and family medicine, received a \$172,393 research grant from the National Cancer Institute to study "Breast Cancer Biology: Epidemiology and Prognosis."

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James J. Hines in the Department of Medicine received a national research service award of \$18,468 from the National Heart, Lung and Blood Institute to study coronary heart disease.

**Bowman Gray
School of Medicine
Wake Forest University**

A two-day international symposium on the immunology of reproduction is expected to attract participants from more than 20 countries when it opens June 24 at the Bowman Gray School of Medicine.

The immunology of reproduction is the highly specialized portion of a much larger field dealing with the body's ability to defend itself from outside threats such as viruses and bacteria and inside threats such as cancer.

Because a fetus does not have the same type of tissue as its mother, the mother's immune system might reasonably be expected to recognize the fetus as foreign material and to attack the fetus. But in most instances, that does not happen.

It is not understood why the fetus' immune system does not recognize and react to the mother's tissue or why the maternal immune system does not attack the fetus.

To have an understanding of why the fetus is pro-

tected in most cases but not in all cases could help in treating diseases of pregnancy and in treating such problems as cancer.

The June meeting is attracting almost all of the world's experts on the immunology, including Dr. Angus Gidley-Baird of Australia, who works with a little-known substance called early pregnancy factor. The factor is released by a fertilized egg about two hours after conception, and has been found to be a powerful suppressor of the immune system.

A research team at the Bowman Gray School of Medicine soon will have ready for routine use a portable system for detecting problems of the brain's blood circulation.

The new system will be useful in evaluating patients who have had problems ranging from stroke to mild loss of memory.

The system is an outgrowth of and an improvement on technology which has been in use in the medical school's regional cerebral blood flow laboratory. That laboratory was one of the first in the nation for the study of blood circulation in the brain.

Previously, patients had to be brought to the laboratory where they would inhale a small amount of radioactive Xenon gas. When brain tissue became saturated with the gas, 16 monitors around the head

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measured the radioactivity being given off from the brain. Analysis of that information permitted doctors to know where brain tissue was damaged or destroyed.

The old system, though, was stationary while many patients were too sick to be brought to it.

Following two years of work, the new system is ready to be taken to such places as the emergency room or operating room while giving useful information more rapidly. The system uses 24 radiation detectors, and its computerization permits a doctor to have information from a test within minutes instead of the two hours required previously.

Doctors at the Bowman Gray/Baptist Hospital Medical Center are using a new diagnostic technique to help assure that while looking for one type of problem in an infant's head, physicians do not create other problems for the infant.

The technique involves using ultrasound to search for bleeding in the brain of premature babies. The ultrasound provides black and white images of the brain's tissue, thus offering a clearer view of ventricles and adjacent tissue than was possible with CT scanning.

And the new technique does not involve moving the infant from the intensive care nursery. Such babies are particularly sensitive to changes in their environment. They also are not exposed to x-rays during the new procedure. The technique uses the soft spot on top of the head as a window into the brain.

Research at the Bowman Gray School of Medicine has shown that some of the dietary goals recommended in 1977 by the McGovern Committee of the Senate may have had more to do with politics than with nutrition.

Dr. Richard W. St. Clair, professor of pathology at Bowman Gray, found that two of the three major recommendations aimed at lowering cholesterol in the bloodstreams of Americans produced no significant benefits.

The three recommendations were to reduce dietary cholesterol by half, change the proportion of saturated and unsaturated fats in the diet, and lower overall fat consumption from an average of about 40% of calories to 30% of calories.

Bowman Gray research found that reducing overall fat consumption from 40% to 30% had no effect on the cholesterol in the blood of research monkeys. The

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recommended change in the ratio of saturated to unsaturated had only a marginal effect.

Reducing the amount of cholesterol in the monkeys' diets did produce an important decrease in the blood cholesterol.

The conclusion from St. Clair's work was that someone could reduce plasma cholesterol levels by reducing the amount of cholesterol in the diet without having to follow all three of the McGovern recommendations. That is based upon the idea that people react to a dietary cholesterol reduction in a manner similar to the way monkeys react.

A new fat substitute made by a firm which also makes shortening may help people lower their cholesterol levels.

Dr. Richard St. Clair has been working with a substance called sucrose polyester. Monkeys given the fat substitute experienced a 16% drop in their intestinal absorption of cholesterol.

Sucrose polyester is made by Procter and Gamble. St. Clair has said that there is no drug which acts by inhibiting the absorption of cholesterol.

While cholesterol is absorbed into the blood

through the intestines, sucrose polyester remains an oil in which some cholesterol becomes trapped for later excretion.

Margaret Ann Hofler, a registered nurse on the Bowman Gray faculty, is the co-author of a new book on how to teach patients.

Ms. Hofler, assistant director of nursing education for the Northwest Area Health Education Center at Bowman Gray, and Lynne Knapp, supervisor of health education for the Durham County Health Department, wrote the *Patient Education Handbook*. The 187-page book is published in Bowie, Md.

The work is written primarily for health professionals and for students. It offers suggestions for assessing patients and their health needs, formulating learning objectives, selecting teaching strategies and evaluating learning.

North Carolina Baptist Hospital, Bowman Gray's principal teaching hospital, has received a three-year certificate of approval from the Commission on Cancer of the American College of Surgeons.

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Contraindications: Topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use in pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, or in large amounts, or for prolonged periods of time.

Dosage and Administration: Apply to affected area 3 or 4 times daily as directed by your physician.

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The approval is in recognition of the hospital's comprehensive cancer treatment program and its tumor registry, which keeps records on cancer patients and stays abreast of what is happening to patients even after they have left the hospital.

A nurse at the Bowman Gray School of Medicine is one of 13 people elected to the North Carolina Board of Nursing.

Mrs. Joyce Gainey, a research associate in the Section on Gynecologic Oncology, will serve a three-year term on the board.

Dr. Lloyd H. Harrison, associate professor of urology, has been appointed by the Southeastern Section of the American Urological Association as the representative of the Allied Health Professionals Committee to the American Urological Association.

Dr. Robert I. Kohut, professor of surgery (otolaryngology), has been appointed chairman of the Committee for Research in Otolaryngology for the American Academy of Otolaryngology — Head and Neck Surgery for 1982-83.

Dr. Ralph B. Leonard, assistant professor of surgery (emergency medicine), has been appointed to the editorial board of PEER III of the American College of Emergency Medicine. This board prepares exams distributed nationally to assess the knowledge of emergency physicians.

Dr. Robert B. Taylor, associate professor of family medicine, has been appointed to the publications committee of the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians.

PLATO [427?-347 B.C.]

In sleep, when the rest of the soul, the rational, gentle and dominant part, slumbers, . . . the beastly and savage part, replete with food and wine, gambols and, repelling sleep, endeavors to sally forth and satisfy its own instincts. . . . there is nothing it will not venture to undertake as being released from all sense of shame and all reason. It does not shrink from attempting to lie with a mother in fancy or with anyone else, man, god, or brute. It is ready for any foul deed of blood. . . . there exists in every one of us, even in some reputed most respectable, a terrible, fierce and lawless brood of desires, which it seems are revealed in our sleep.

Republic, IX. 571 (tr. by P. Shorey)

In Memoriam

WILLIAM LARKIN NORVILLE

Dr. William Larkin Norville was born in Rutherford, N.C., on October 6, 1910. He was educated at Maryville College, Maryville, Tennessee, and the University of Tennessee School of Medicine, graduating in 1936. He interned at the South Carolina Baptist Hospital, Columbia, S.C., and went into the general practice of medicine in Whitmire, S.C., for thirteen years. From 1950 to 1952 he was Health Director of the Rutherford-Polk District Health Department.

In 1952 he was named director of the Alamance County Health Department. While maintaining his directorship, he attended the University of North Carolina School of Public Health and earned a Master of Public Health Degree in 1955. He retired as Alamance County Health Director on December 31, 1975.

Dr. Norville was a member of the Alamance County Medical Society, the Medical Society of North Carolina, the American Medical Association, the N.C. Public Health Association, and the First Presbyterian Church of Burlington. He was married to Lillie Mar Freeman Norville, who survives, and they have three married daughters and seven grandchildren.

Dr. Norville expired from cardio-vascular disease on January 12, 1982, after a long illness.

ALAMANCE COUNTY MEDICAL SOCIETY

BERNARD LESLIE RICHARDS, M.D.

Bernard Leslie Richards, born in Stittsville, Mich., May 2, 1917, died at the North Carolina Baptist Hospital September 11, 1981.

After graduating from high school in 1938 he worked on the family farm in Michigan and then served in the Army in World War II. Following this he took an x-ray technician course and worked in a mission hospital in Trinidad from 1949 to 1952. On returning to the United States, he received his B.A. degree from Columbia Union College and his M.D. degree from Loma Linda University in 1958. His internship was in Portland, Oreg., and he then moved to Mocksville, N.C., in 1959 where he lived until his death. He was a member of the Forsyth-Stokes-Davie County Medical Society, and the American Academy of Family Physicians.

During his 22 years in Mocksville, he had an active general practice; operated a large beef cattle farm; was elected County Coroner, and later was appointed Medical Examiner. He was a member of the Board of Trustees of Davie County Hospital and was an active member of the Mocksville Seventh-Day Adventist Church.

He leaves a wife, Aletha Shook Richards; a daughter,

Patty Richards, a nurse in Chattanooga, Tenn.; one sister and three brothers. He will long be remembered as a concerned and sympathetic physician, a devout church leader, a devoted husband and father, and a friend, who always had time to stop a few minutes and talk. His life touched many people and he will be missed by all of them.

FORSYTH-STOKES-DAVIE
MEDICAL SOCIETY

DAVID GROVER JAEHNING, M.D.

Dr. David Grover Jaehning, a member of the Forsyth-Stokes-Davie County Medical Society, died unexpectedly on December 26, 1981. David Jaehning was born in Twin Valley, Minn., to Herman and Emma Jaehning. He received his M.D. from the Bowman Gray School of Medicine in 1948 and served in the Navy during World War II and the Air Force during the Korean Conflict. He was in family practice in Wahpeton, N.D., for 27 years, moving in 1979 to Clemmons, N.C., where he established the Family Practice Clinic. During the short period of practice in Clemmons, he became widely known for his dedication to patient care.

He is survived by his wife, the former Mattie Williard; a daughter, Candice Jaehning of Denver, Colo., two sons, Mark J. Jaehning of Denver and Gregg Jaehning of Wahpeton; and three grandchildren.

FORSYTH-STOKES-DAVIE
MEDICAL SOCIETY

OLIN CHARLES PERRYMAN, JR.

Olin Charles Perryman, Jr., was born August 11, 1917, in Winston-Salem, N.C. He was the only son of Olin Charles Perryman and Mary Zimmerman Perryman and lived his entire life in Winston-Salem except for the years spent receiving his medical education and serving his country during World War II.

After graduating from the R. J. Reynolds High School, he earned his Bachelor of Arts degree from the University of North Carolina. Four years later he was graduated from the Duke University School of Medicine in Durham with the degree of Doctor of Medicine. His internship and residency programs were served at the N.C. Baptist Hospital of the Bowman Gray School of Medicine in Winston-Salem.

Dr. Perryman began his private practice of medicine in Winston-Salem, but his practice was interrupted when he entered the service of his country in the Army

Medical Corps from 1942 until 1946 with overseas duty as Captain.

Dr. Perryman was interested in family practice, and in September 1972 he was chosen a charter member of the American Academy of Family Practice. He was a member of the Medical Park Hospital Staff, the medical-dental staff of the Forsyth Memorial Hospital where he once headed the family practice division of medicine, the Forsyth-Stokes-Davie County Medical Society, the North Carolina Medical Society, and the American Medical Association.

He received his early religious training at the Home Moravian Church and was a life-long Moravian. In 1953 he transferred his membership to Konnoak Hills Moravian Church, where he was active in many phases of church life. He sang in the choir, played the trumpet in the church band, and, at the time of his death, he was serving as chairman of the Board of

Trustees. He was a charter member of the Konnoak Lions Club in which he played a leading role.

In June 1946 he was married to Ellen Brannock of Mount Airy and was the father of two daughters, Mrs. Sharon Dowdy of Raleigh, N.C., and Mrs. Marsha Fowler of Nashville, Tenn. He is also survived by a grand-daughter, Robyn Frederick, and two sisters, Mrs. P. A. Perryman of Winston-Salem, and Mrs. C. L. White of Thomasville, N.C.

Dr. Perryman died at his home October 20, 1981, following several months of illness. He was dedicated to the practice of family medicine which he performed with a high degree of efficiency and skill for 35 years. His private patients, those living in his community, and those closely associated with him in his profession will remember him as a quiet, unassuming, sincere man who lived a life of devoted service to others.

BENJAMIN F. MARTIN, M.D.

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References: 1. Shaw S, Lieber CS: Nutrition and alcoholism, chap. 40, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME. Philadelphia, Lea & Febiger, 1980, pp. 1220, 1237. 2. Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, op. cit., p. 781. 3. Shils ME, Randall HT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, op. cit., pp. 1084, 1089, 1114. 4. Dixon RE: *Ann Intern Med* 89 (Part 2): 749-753, Nov 1978. 5. Committee on Dietary Allowances, National Research Council: Recommended Dietary Allowances, ed 9. Washington, National Academy of Sciences, 1980, p. 13.

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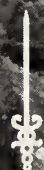


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June 1982, Vol. 43, No. 6

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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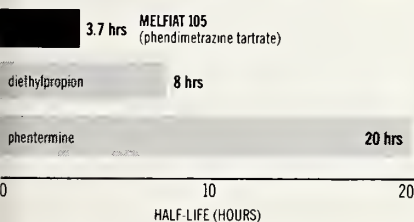
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References: 1. Sheu YS, Ferguson JA, Cooper JR: *Evaluation of the Abuse Liability of Diethylpropion, Phendimetrazine, and Phentermine*, unclassified document ADAMHA, HHS, Office of Medical and Professional Affairs, NIDA, 1980.
2. Douglas JG, Munro JF: The role of drugs in the treatment of obesity, *Drugs* 21:362-373, 1981.

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USAGE IN PREGNANCY: The safety of phendimetrazine tartrate in pregnancy and lactation has not been established. Therefore, phendimetrazine tartrate should not be taken by women who are or may become pregnant.

USAGE IN CHILDREN: Phendimetrazine tartrate is not recommended for use in children under 12 years of age.

PRECAUTION: Caution is to be exercised in prescribing phendimetrazine tartrate for patients with even mild hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of phendimetrazine tartrate and the concomitant dietary regimen. Phendimetrazine tartrate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage.

ADVERSE REACTIONS: Cardiovascular: Palpitation, tachycardia, elevation of blood pressure.

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Gastrointestinal: Dryness of the mouth, unpleasant taste, diarrhea, constipation, other gastrointestinal disturbances.

Allergic: Urticaria.

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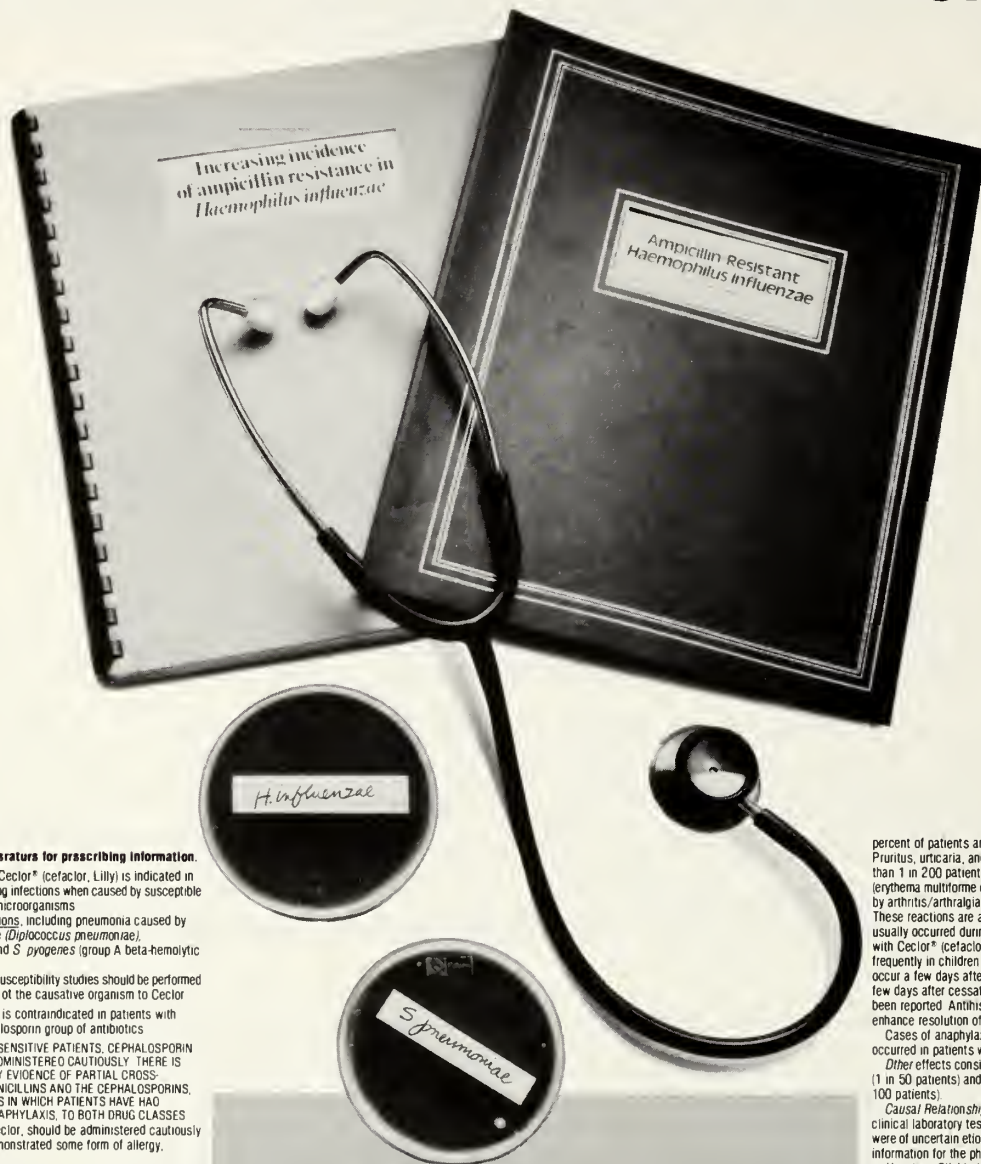
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An added complication... in the treatment of bacterial bronchitis*



Brief Summary.

Consult the package literature for prescribing information.

Indications and Usage: Cecilor® (cefactor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cecilor.

Contraindication: Cecilor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cecilor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefactor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefactor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coomb testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cecilor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cecilor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Usage in Pregnancy: Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy: Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefactor therapy are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been reported in conjunction with therapy with Cecilor.

Hypersensitivity reactions have been reported in about 1.5

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cecilor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cecilor.⁷

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cefactor

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percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthritis and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cecilor® (cefactor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain: Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic: Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic: Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal: Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200) (100281R).

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cecilor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285. Eli Lilly Industries, Inc. Carolina, Puerto Rico 00630.



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Others to look for:

agitation
anorexia
feelings of guilt
and worthlessness
fatigue
palpitations
headache
vague aches
and pains
sadness
psychic and
somatic anxiety

Artist's conception,
looking out from the human eye
as conceived in a schematic model.



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Limbitrol brings a special—and specific—quality of relief to most anxious depressed patients. Insomnia, for example, responds with particular promptness. Other symptoms likely to respond within the first week of treatment include anorexia, agitation and psychic and somatic anxiety. And, as the depression and anxiety are alleviated, in many cases so are such related somatic symptoms as headache, palpitations, and various vague aches and pains.

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in moderate depression and anxiety

Limbitrol®[®] IV

Tablets 5-12.5 each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline
(as the hydrochloride salt)

Tablets 10-25 each containing 10 mg chlordiazepoxide and 25 mg amitriptyline
(as the hydrochloride salt)

Specific therapy with h.s. dosage convenience

Please see summary of complete product information on following page.

LIMBITROL® TABLETS Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety.

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses). Myocardial infarction and stroke reported with use of this class of drugs. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage. Withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs.

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage at three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage at three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10. Prescription Paks of 50.

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Those parasites that live primarily in the duodenum or bile ducts often are more readily seen in the duodenal contents than in the stool. These include *Giardia lamblia* (motile trophozoites), *Strongyloides stercoralis* (eggs and/or eggs in advanced stages of development), *Clonorchis sinensis* (eggs), *Fasciola hepatica* (eggs), *Trichostrongylus orientalis* (eggs), and *Isospora* (coccidia).

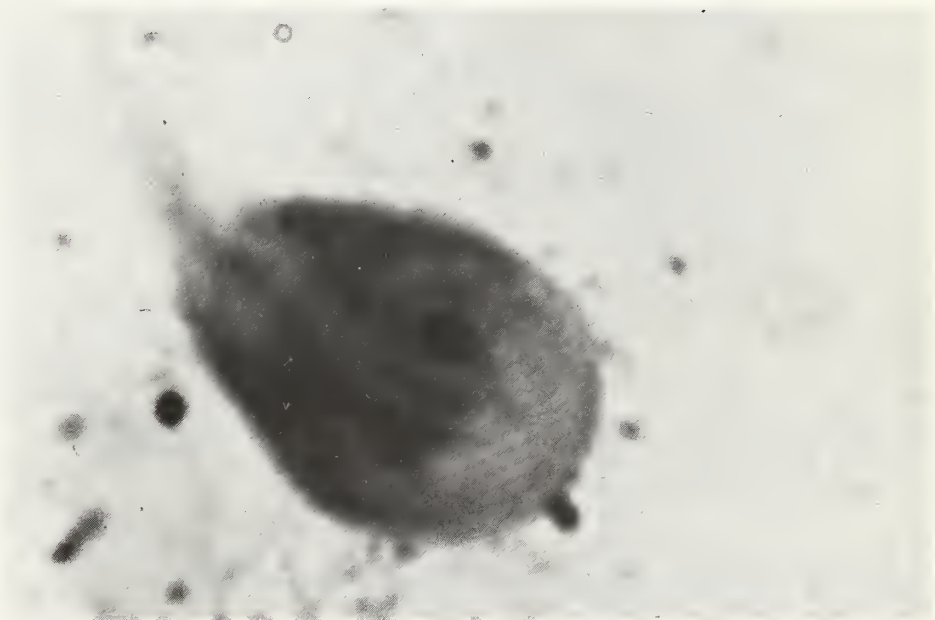
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Giardia lamblia

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Calories/100 gm.	275	243	180
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Equally important, the fiber content of Less is 400% greater than whole wheat bread. Two slices are about equal to a one-ounce-serving of whole bran cereal.

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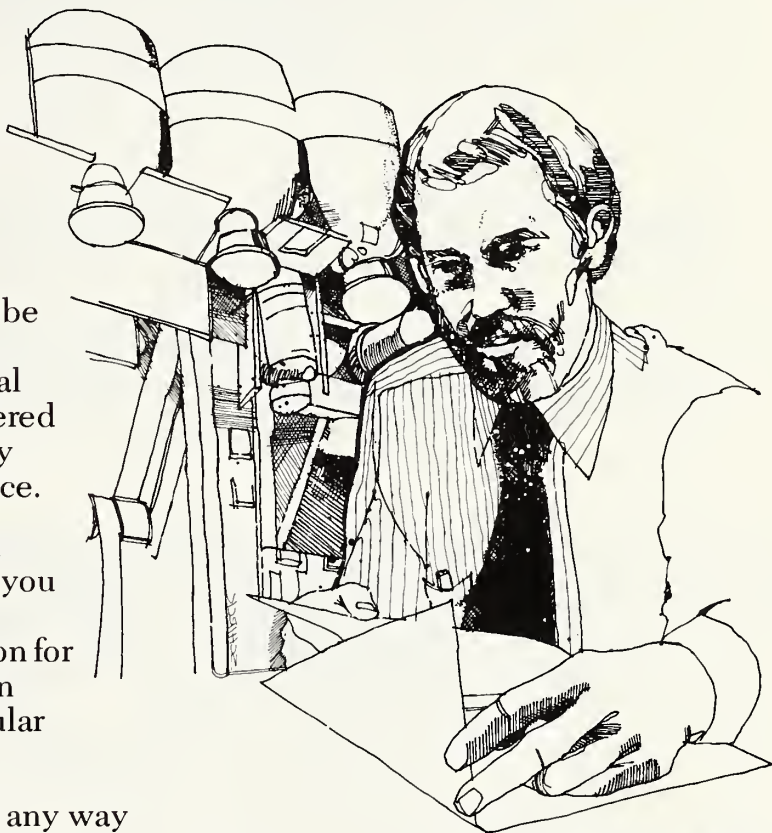
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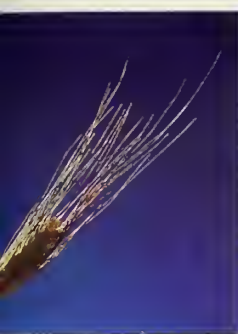


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Kitt, D.P. and Meisner, P.: How to manage constipation with a high-fiber diet, *Geriatrics* 34:33-40, Feb. 1979.

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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 1

JUNE 1982

The College of Surgeons North Carolina Chapter had a grand meeting down at Myrtle Beach this month, and I want to thank them for their warm hospitality and fellowship. This was the first of many specialty meetings which I hope to attend this year. I hope that each specialty society will feel the need to work closely with the North Carolina Medical Society in our joint and mutual concerns and efforts in the participation of the health care of our patients. I want to visit as many of the specialty groups as possible and encourage them to join our concept of unity, membership, and solidarity for the upcoming year.

I hope this year to visit each one of them much like Dr. Newell has done so well this past year in visiting and bringing the message of the Medical Society to the county medical societies.

It looks like it is going to be an exciting year, and I have great hopes and enthusiasm for the numerous projects that we have underway. Dr. Newell's feet may not be very large, but the footsteps I am trying to follow are mighty big, and I am only beginning to appreciate how very big the job I have been given is.

SB-411, an Act to Re-define the Practice of Chiropractic, will be considered by the North Carolina House of Representatives in the next few weeks. Please watch your mail for requests for help from the Committee on Legislation. If the Committee asks you to contact your legislators, it will be imperative that you act immediately. It is important to the health care of all citizens of our state that this radical legislation be defeated.

Each month I will be including a brief paragraph on our living Past Presidents. I think it is very important for us to look at where we have come from and acknowledge those who have done so much for us in the past. And I am very pleased to begin this with the only other President, to the best of my knowledge, who came from the Northeast North Carolina area, Dr. Zack Owens.

I learned a lot from looking at our Past Presidents and what they have done; and while I am very excited about the future, I am also very proud of the past.

Of the principle activities during Dr. Owen's year as President was the promotion of the Salk polio vaccine campaign. The May 1955 Annual Meeting, which concluded Dr. Owen's term, voted to admit blacks to Society membership. The theme of his Presidential Address was "The Human Side of Medicine"---in which he commented, "We as physicians have a sacred trust in each other and to the profession to give the best possible medical care. Exorbitant fees, unnecessary surgery, and unnecessary

medical care reflect on the honor and integrity of our profession." He concluded with the comments: "Let us therefore dedicate ourselves to the service of humanity and emulate the Great Physician by doing good for others so that our treasures may be stored in the hearts and minds of men. Let us serve as a lighthouse in our community, guiding the mariner and voyager on the sea of trouble and frustration to a safe and happy landing."

I hope to see many of you at the July 2-4, 1982, meeting of the Sports Medicine Symposium sponsored by the Society's Committee on Medical Aspects of Sports, Blockade Runner in Wrightsville Beach.

Sincerely,

M. S. Redding MD

Marshall S. Redding, M.D.
President



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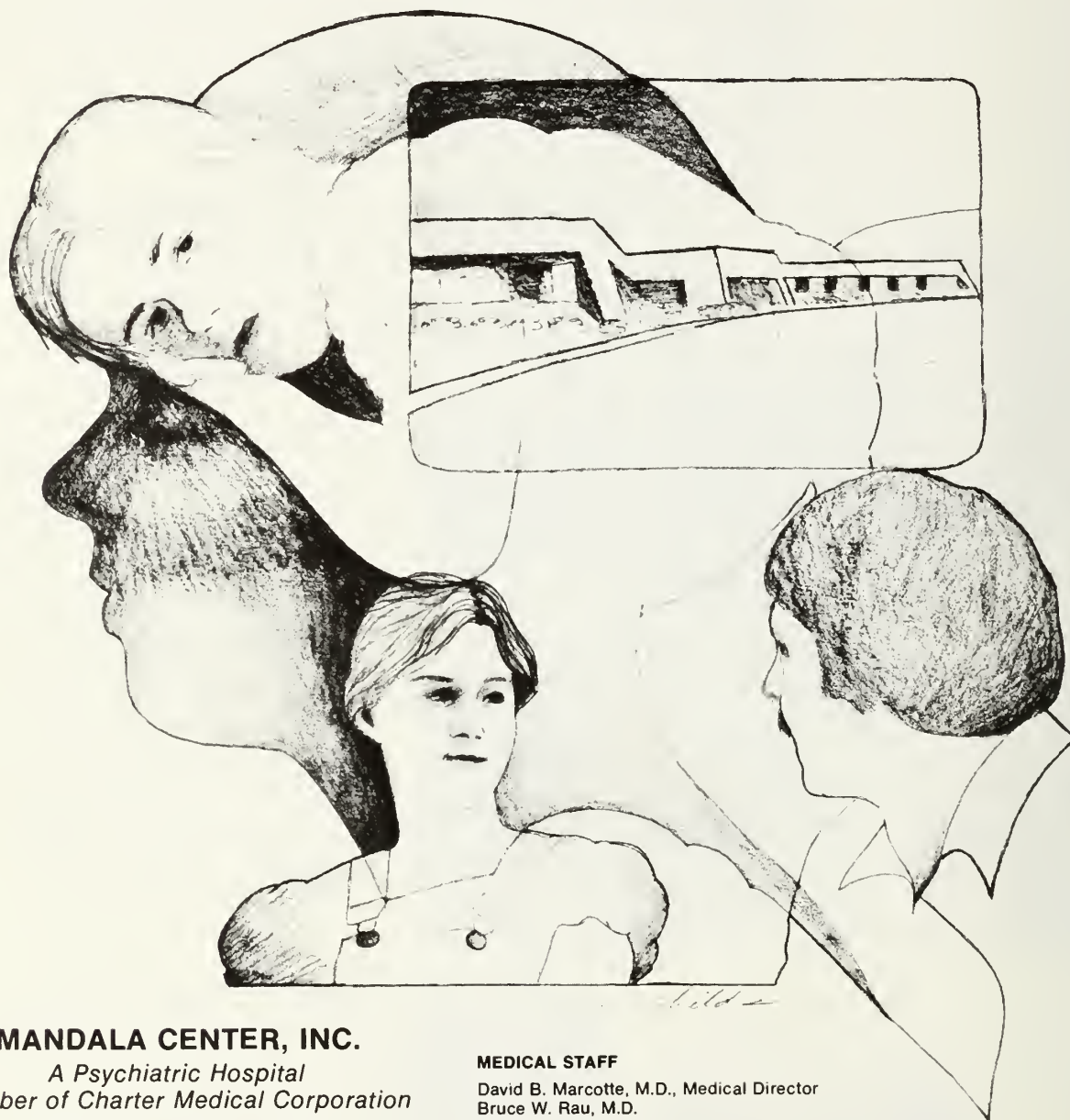
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Computed Tomographic Diagnosis of the Obstructed Duplex Kidney in Adults

Stephen H. Ladwig, M.D., Robert A. Older, M.D.,
William L. Foster, M.D., and Melvyn Korobkin, M.D.

ABSTRACT The hydronephrotic duplex kidney in the pediatric population is a frequent urologic abnormality. The obstructed duplex kidney in the adult population is less frequently encountered. Its presentation can be unusual and pose a diagnostic problem. Computed tomography of the abdomen can provide significant information which may not be obtainable by excretory urography or ultrasonography. The use of computerized tomography for diagnosis of massive hydronephrosis of a duplicated system in an adult¹ has been described. Three cases of this entity seen at the Duke University Medical Center are reported here, including the initial patient.

CASE REPORTS

Case 1

AN 85-year-old white female presented with a one year history of frequency and nocturia. Physical examination was unremarkable. Urinalysis demonstrated microscopic pyuria and hematuria with bacteriuria. Urine culture grew greater than 100,000 colonies per milliliter of *E. coli*.

Excretory urography revealed a hypovascular 6-7 cm left upper pole renal mass with lateral displacement of the kidney and ureter (Figure 1A). The possibility of a duplication of the left renal collecting system with obstruction was raised, but cystoscopy demonstrated only a small ureteral orifice on the left. Computed tomography revealed a low density mass in the upper pole of the left kidney. The mass tapered into an elongated tube medial and anterior to the left ureter, which was felt to represent a dilated ureter and collecting structures in a duplicated system (Figures 1B, 1C).

Surgery confirmed duplication of

the left renal collecting system with obstruction of the left upper pole. A left hemi-nephrectomy was performed.

Case 2

An 18-year-old black female was initially admitted to the gynecology service at Duke Medical Center for a pelvic mass. The patient was seen

in the Duke emergency room with complaints of epigastric pain, nausea and vomiting. The patient had a one week history of lower abdominal pain. The review of systems was negative for gastrointestinal or genitourinary symptoms. The patient had a past history of congenital heart disease with repair of an atrial septal defect. A cystic



Fig. 1A. Hydronephrotic left upper pole collecting system with lateral displacement of the kidney.

From the Duke University Medical Center
Durham, N.C.

Reprint requests to Dr. Ladwig
Department of Radiology
Nash General Hospital
Rocky Mount, N.C. 27801

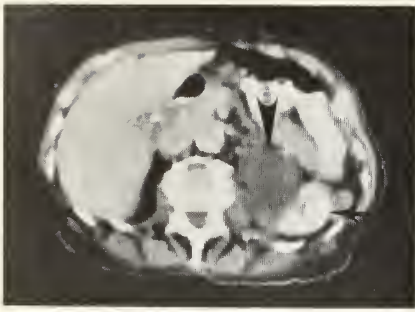


Fig. 1B. Hydronephrotic left upper renal pole on CT scan.

pelvic mass was detected with extension into the left lower quadrant of the abdomen. The mass measured 20 x 10 centimeters and was non-tender.

An excretory urogram revealed a large left abdominal and pelvic mass. Diagnostic possibilities centered on hydronephrosis either related to congenital abnormality or secondary to a gynecologic mass (Figure 2A). A duplicated system was in favor of a congenital abnormality on the left. A left retrograde pyelogram although unsuccessful in defining the ureter suggested an ectopic position of the orifice.

Computed tomography revealed a large abdominal and pelvic mass which extended from the inferior spleen to the bladder. The mass was water density and consistent with a hydronephrotic left kidney and ureter (Figures 2B, 2C). No normal left kidney could be identified.

A radionuclide renal scan demonstrated no renal function on the left and a mass inferior to the spleen.

Exploratory laparotomy confirmed a congenitally obstructed left ureterocele with massive hydro-ureteronephrosis of the upper pole system. The renal pelvis and lower



Fig. 2A. Large left retroperitoneal mass felt to be a hydronephrotic left kidney. Filling defect in the left side of the bladder due to a hydro-ureter.

ureteral system were atretic. A left nephroureterectomy was performed.

Case 3

A 54-year-old white male developed right flank pain 10 days after a fall. Initial evaluation at another institution included an excretory urogram. It demonstrated an abdominal mass displacing the left kidney. The patient was referred for further evaluation. Laboratory studies were normal.

Excretory urography with nephrotomography revealed a large mass in Gerota's fascia displacing and rotating the left kidney laterally (Figure 3A). Para-aortic and left retroperitoneal masses were present causing bilateral partial ureteral obstruction. The differential diag-

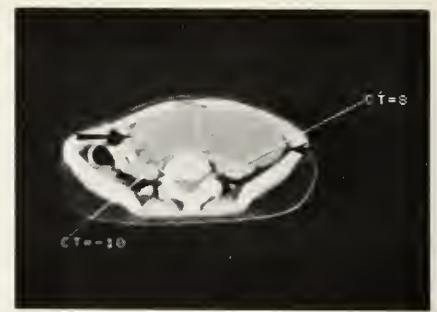


Fig. 2C. Left hydroureter within the pelvis on CT scan.

noses included lymphadenopathy, gastrointestinal carcinoma, traumatic hematoma, and duplication of the left renal collecting system with hydronephrosis. Ultrasound demonstrated a large cystic mass displacing the left kidney. The multiple para-aortic and abdominal masses were not clearly cystic. The differential possibilities included lymphoma or multiple tumors. Computed tomography revealed all masses were water density (Figures 3B, 3C). The impression was a duplicated left collecting system with massive hydronephrosis and a tortuous left upper pole ureter. Cystoscopy revealed a normal trigone, but no additional ureteral orifice.

Exploratory laparotomy confirmed duplication with obstruction of the left renal upper pole collecting system. Dilatation and tortuosity of the ureter represented the multiple retroperitoneal masses.

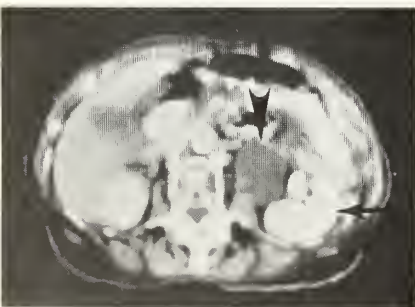


Fig. 1C. Left hydroureter on CT scan.



Fig. 2B. Hydronephrotic left kidney on CT scan.



Fig. 3A. Hydronephrotic left upper pole renal collecting system.



Fig. 3B. Hydronephrotic left upper renal pole on CT scan.



Fig. 3C. Left hydroureter on CT scan seen as multiple water density masses.

The upper pole ureter ended blindly near the prostatic fossa.

DISCUSSION

Duplication of the renal collecting system and ureter is the most common anomaly of the genitourinary system. The ureter from the upper pole moiety inserts below the trigone, may end in a ureterocele, and frequently causes obstruction. The kidney can be a hydronephrotic sac in these cases. The lower pole moiety has its ureteral insertion at the trigone and is frequently associated with reflux.

Excretory urography often provides the diagnosis of a hydro-

nephrotic upper pole duplex system by characteristic changes in the visualized portion of the kidney. Ultrasonography can also aid in this diagnosis by demonstration of a hydronephrotic upper pole collecting system and hydroureter.² However, ultrasonography is dependent upon operator technical skill and subject to variation. Computed tomography is not operator dependent and less subject to variation.

The three cases presented in this article demonstrate the value of computed tomography in the diagnosis of hydronephrosis of a duplex system in the adult. The initial pre-

sentation of this entity may be unusual. Although excretory urography suggested this diagnosis in each of these cases, other diagnoses more consistent with the patient's age and clinical findings also had to be considered. Ultrasonography which was performed only in the third case did not corroborate the diagnosis of duplicated kidney because the retroperitoneal masses were not clearly cystic. Computed tomography did demonstrate the water density of the retroperitoneal masses in all three cases. It correctly suggested the diagnosis in each case and in the first case demonstrated the renal mass tapering into a dilated tubular structure, the hydroureter.

Computed tomography has been previously demonstrated to be of significant value in the diagnosis of renal masses and urinary tract obstruction.³ Our cases show its usefulness in diagnosing obstructed duplex systems in adults.

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The following curious physic-al advertisement is copied from a late New Hampshire paper.

A cure for a BILL-ious Complaint!

The subscriber having had many BILLIOUS patients, forming no inconsiderable portion of his practice, finds it necessary to adopt some *specific remedy* that shall afford *immediate relief*, as (from the accumulation of his *bills* and the want of ready *preventatives*) he is threatened with the *jail-cholic*. After many *compounds* and scientific *experiments*, he finds nothing so certain of *effecting a radical cure* as the *Essence of Industry*, extracted by *chemical process* and commonly made into *pills* and taken in the size of eagles, dollars, etc. or sometimes when these cannot be had, the efflorescence arising iron the process, generally called bank bills, will prove efficacious. Those, therefore, whose *complaints* have become *BILL-ious* to the subscriber, must send him their portion of the *ingredients* for his relief, or expect shortly to have the *sheriff's gripes*.

CHARLES TUTTLE, PHYSICIAN.

Milford, July 30, 1811
(Taken from THE STAR, printed in Raleigh, August 30, 1811)
(Submitted by J. Ross Shuping, M.D., Greenville, N.C.)

Drowning in North Carolina: How You Can Prevent Unnecessary Loss of Life

Van J. Stitt, Jr., M.D.

ABSTRACT An inordinate number of adolescents die by drowning each year. In North Carolina alone, 190 such deaths occur each year. More black males, ages 15-19 — approximately 16 per year — drown; the rate for white males of the same age is also high. This paper emphasizes the role of the medical community in prevention.

BETWEEN 5,000 and 6,000 people drown each year in the United States.¹ There were approximately 5,700 deaths by drowning in 1978 alone, surpassed only by motor vehicle deaths (52,000); deaths from falls (13,000); and deaths from burns (6,000). This makes drowning the fourth most common cause of accidental death in the United States.¹ North Carolina reported in the same year 189 drownings, exceeded only by the 1,515 fatalities due to motor vehicle accidents.^{1,2}

Groups at particular risk of drowning include teenage boys, all toddlers, and people with seizure disorders. In 1977, more than 7,126 bodies were recovered from waters in the United States and more than 1,100 of those drowning were children under the age of 15.¹ Most of these children died within a few feet of safety and in the presence of a supervising adult.

INCIDENCE AND SCENE OF ACCIDENTS

Home swimming pools were the most common site of drowning for young children. Among children one to four years old, 80%-90% of drowning accidents occurred in a swimming pool. Even though some

were able to float and did not panic initially, many were unable to get out of the water because the walk area around the pool was too high above the water level for them to reach it. A number of these toddlers had not entered the water intentionally but were riding or playing near the edge of the pool and fell in. The parents (who were often nearby) noted that their children were "missing," but did not search for them until it was too late. Although no data are available in regard to near-drowning, it is probably a conservative estimate that twice as many near-drownings occur as actual drownings. With the continuing increase in the number of home swimming pools, these episodes will no doubt increase.

North Carolina has no laws that bear on water safety. In particular, there are none that govern legal liabilities in regard to private pools. Counties, however, have instituted regulations which are somewhat similar in that they require a fenced-in area around open pools and that some rescue equipment be available. Failure to comply results in legal liability to pool owners.

The rate of death in North Carolina parallels the national rate. The overall drowning rate is higher for black males in the 15-24 age range. Black males have a three times greater chance of drowning than white males of the same age. Males

of both races were eight times more likely to drown than females. Drowning rates were higher for blacks in all age groups except the youngest. The low drowning rate for black toddlers may be due to the absence of private swimming pools in their neighborhoods. However, with greater mobility during adolescence, the frequency of pool use and drowning death increases. Failure to learn to swim at an early age probably predisposes older black children to the greater possibility of drowning.

Although pre-existing illnesses are associated with a small percentage of drownings, most can be attributed to over-estimation of swimming capabilities, exhaustion, or alcohol. A few of the victims, however, did have seizure disorders or were mentally retarded.

SEASON

As would be expected, most drownings are more likely to occur during the warmer months. Of the more than 7,000 recorded in 1977, half were reported during May, June, July, and August.¹ Drownings from October to April were more likely to result from boating, hunting or fishing accidents.

PREVENTION PROGRAMS

Swimming programs in North Carolina are operated primarily by the YMCA, municipalities and pri-

Fayetteville Area Health Education Center
P.O. Box 64699
Fayetteville, N.C. 28306

vate clubs, which maintain high standards of safety. At public pools operating in larger communities trained lifeguards are required. The children participating in these programs, however, are not the ones who are drowning.

Many drownings can be prevented through education and training. Since those at highest risk are adolescents, both white and non-white, education could be initiated in the school system, possibly as a part of physical education programs. A recent study involving a large number of Australian school children revealed that water safety training was as important as swimming lessons.³

As part of the school program in Fayetteville, N.C., all fourth-graders are given water safety and swimming instructions as part of their school curriculum. Although there has been some controversy as to when the instruction should be offered, the system has generally agreed it is a good program. Since its inception, resident deaths in Cumberland County from drowning in the age group taught safety and survival techniques have been three in 1978; four in 1979; to zero in 1980. This represents an impressive example of how important water safety instruction can be.⁴

Little emphasis has been placed on the role of alcohol in drowning. Most alcohol studies have been in relation to motor vehicle accidents and a study to determine how many drownings are associated with alcohol or drug use should be undertaken.

Below are listed several rules⁵ that if followed may prove helpful in the prevention of drowning.

Swimming Safety

- 1. A good test for readiness to

learn to swim is the ability of the child to hold his own breath on command.

- 2. Organized swimming instruction is not recommended for children under three years of age because it is difficult for them to hold their disproportionately large heads out of the water.

- 3. Young children should be taught never to swim alone or unsupervised.

- 4. Allow diving only into water of known and sufficient depth.

- 5. Instruction in swimming should be obtained from qualified instructors.

- 6. False distress alarms should not be permitted.

- 7. No one should swim alone.

- 8. Always have competent adult supervision.

- 9. Do not swim after eating a heavy meal, drinking alcohol or taking medication.

Pool Safety

- 1. Pools require fences four to six feet high with a self-locking latch.

- 2. Do not use a diving board in a pool which is not deep enough. (Diving accidents cause 500 cases of quadriplegia annually in the United States.)

- 3. Avoid pool slides, which are potentially dangerous.

- 4. Keep essential rescue devices readily on hand at the pool.

- 5. Keep electrical appliances away from the pool.

- 6. Paint numbers on the pool's edge showing depths at various points.

- 7. Use stepladders at least three feet wide and made of non-slippery material with night-glow tape.

- 8. Put nothing outside the pool fence which will enable a child to climb over it.

- 9. Allow no riding toys beside the pool.

- 10. Place a tamper-proof cover on the pool when it is not in use.

- 11. Do not use the pool after eating a large meal or after drinking alcohol.

- 12. Do not swim in the dark.

Boat Safety

- 1. At least one adult swimmer should be present for each non-swimming child.

- 2. Do not overload the boat.

- 3. Do not allow standing in small boats.

- 4. Flotation life jackets should be worn by every passenger, whether he can swim or not.

- 5. Make sure the boat has been properly maintained.

- 6. Check weather forecast to avoid getting caught in storms.

- 7. Know the boat's limitations.

- 8. Do not go out in a boat if you have been drinking or have taken medication.

CONCLUSION

At a time when deaths from motor vehicle accidents appear to be decreasing, a disproportionate number of children are drowning. It is the conclusion of most studies that education and training could significantly reduce this number. Intensified supervision, instruction and enforcement of safe water (pool) and boating policies and emphasis on education of water safety in high risk groups seem justified.

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THOMAS HUXLEY [1825-1895]

Education is the instruction of the intellect in the laws of Nature, under which name I include not merely things and their forces, but men and their ways.

A Liberal Education

The Effect of Legal Change On Patterns of Psychiatric Care: The Input of Change of Commitment Law

David J. Goode, M.D., Robert McDaniel, M.S.W.,
Tom Plott and John Hiatt

ABSTRACT In 1979, the North Carolina civil commitment law was revised with the intent that commitment be easier. In 1978, before enactment of this legislation, 100 committed patients at Broughton Hospital, which serves the western region of North Carolina, were randomly selected for study. Attitudes of patients, their families, and local committing physicians toward the commitment procedure were assessed by voluntary questionnaire. Patients expressed generally positive attitudes toward commitment, demonstrated some insight into their condition, and viewed their hearing as fair. In contrast, the majority of family members and committing physicians viewed commitment unfavorably. In particular, family members were found to be highly stressed by commitment procedures and to have few sources of support from the mental health system. In a similar study performed one year after passage of the commitment legislation, no change was observed in proportion of patients coming to hearing or of those committed at the time of hearing and attitudes surveyed showed little change from 1978 to 1980. A slightly higher proportion of patients' families expressed dissatisfaction with commitment, indicating that additional supportive services for families of committed patients are needed.

IN the state of North Carolina, involuntary commitment for treatment in a mental health facility is obtained through a procedure common to many other states. A petition may be originated by any citizen, but is most often sworn out by a member of the respondent's family. This petition must be signed by a judge or magistrate. A physician's referral must be included with the petition unless the respondent's behavior warrants emergency intervention. The respondent is taken to a regional psychiatric hospital where he is examined by a physician within 24 hours of arrival. Unless he is released by the hospital physician, the patient has a hearing within 10 days of his admission. In the hearing, evidence from the hos-

pital physician and/or the testimony of anyone concerned, usually the petitioner, is presented before a district court judge. An attorney is available to represent the patient, and another to represent the hospital and the petitioner. The maximum initial commitment is 90 days. Commitment may be for treatment at the regional facility, outpatient treatment at a local mental health center, or a combination of the two.

Largely due to public dissatisfaction with the process of commitment, the commitment law was changed in October, 1979 (North Carolina General Statute 122-58 Involuntary Commitment Law Revised). This change was designed to facilitate commitment of patients who are clearly ill and in need of treatment but not immediately dangerous. The term "imminently" was deleted as a modifier for dangerous, and danger was explicitly expanded to include the likelihood of the indi-

vidual's suffering serious physical debilitation "without care, supervision, and continuous assistance from people not otherwise available." In 1978, one year before enactment of the new law, a study of the commitment process was conducted at Broughton Hospital, the state psychiatric hospital serving the western region of North Carolina¹. To assess the impact of the change in law, the study was repeated for a similar group of patients admitted to Broughton Hospital during August of 1980.

Methods:

Committed patients were randomly selected each week during July and August from all filed admission cards until 100 patients were obtained, excluding inebriates. Questionnaires were designed to assess attitudes toward the commitment process and perceived effects of commitment. Different question-

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naires were directed to the patient, his family, and the committing physician in the community. In all cases, the purposes of the study were explained and approved written consent was obtained. Hospital charts were evaluated for adequacy of legal documentation and impact of commitment on the treatment process. The court hearing was observed and evaluated as to time spent, legality of process, and atmosphere. In 1980 only, a questionnaire designed to elicit opinion on the effects of the legal change on the patient population and commitment was sent to all psychiatrists, psychologists, social workers, and nursing supervisors. Table I presents the proportion responding to the questionnaires of each group surveyed.

Results:

Characteristics of the patient groups: Table II summarizes the age, sex, race, marital status, and history of previous hospitalization of patients in the two studies. The groups are demographically comparable. A large proportion of the patients were unmarried and unemployed and had histories of multiple hospitalizations. Diagnoses of patients from both studies are presented in Table III. The percentage of depressed patients increased from 8% in 1978 to 14% in 1980, and the percentage of patients diagnosed as schizophrenic decreased from 36% to 27%. In 1980, 49% of the patients had been seen in local mental health centers before their admission; that figure was 63% in the 1978 study.

TABLE I

Proportion of Groups Surveyed who Responded to Questionnaire

Group	Proportion Responding (%)	
	1978 Study	1980 Study
Patients	54	68
Families	44	58
Physicians	56	33*
Hospital Staff	—	32

*Several physicians in the 1980 survey participated in commitment of more than one patient, such that committing physicians of 56 patients are represented.

TABLE II

Demographic Data of Patient Population Studied Before and After Change in North Carolina Commitment Law

	1978 Study	1980 Study
AGE		
Mean	41.0	35.6
Range	16-86	18-65
SEX		
Male	53	54
Female	47	46
RACE		
White	79	79
Black	21	21
MARITAL STATUS		
Single	35	43
Married	32	31
Separated	11	12
Divorced	11	9
Widowed	11	5
EMPLOYMENT		
Employed	12	16
Unemployed	66	83
Retired	9	1
PREVIOUS HOSPITALIZATIONS		
None	33	28
1-4	37	31
5	30	41

Legal process evaluation: Outcome of the commitment process before and after the legal change is summarized in Table IV. Of the patients who came to hearing, 26/72 (36.1%) were committed in 1978, and 30/78 (38.5%) in 1980. There was no overall change in proportion of patients committed after the change in commitment law. The only notable difference is a reduction in the number of patients signing in on voluntary status prior to hearing. This was due in part to a decrease in the number of offers of voluntary status being made to patients, since 24% of the 1980 patients responding said they were offered voluntary status compared with 57% in the 1978 study.

In the 1978 study, the proportion of patients committed was greater (44%) when both the physician and family testified at the hearing than when either family only (33%) or doctor only (25%) or neither (0%) testified. In the 1980 study, 68% of patients were committed when both family and physician testified, com-

TABLE III

Diagnostic Data of Committed Patients Studied Before and After Change in North Carolina Commitment Law

Diagnosis	Number (Percent) Patients	
	1978 Study	1980 Study
Organic Brain Syndromes	17 (22%)	7 (8%)
Mental Retardation	3 (4%)	8 (9%)
Depression	6 (8%)	12 (14%)
Schizophrenia	28 (36%)	24 (27%)
Manic-Depressive Disease	8 (10%)	10 (11%)
Personality Disorders	3 (4%)	7 (8%)
Alcohol/Drug Related Syndromes	5 (7%)	11 (13%)
Paranoid State	1 (1%)	1 (1%)
Adjustment Reactions	3 (4%)	3 (3%)
Unspecified Psychosis	0 (0%)	5 (6%)
No Mental Disorder/Diagnosis Deferred	3 (4%)	4 (5%)

TABLE IV

Outcome of Commitment Process in 100 Patients Before and After North Carolina 1979 Commitment Law Change

	1978 Study	1980 Study
Patient released as not dangerous by hospital physician prior to hearing	8	14
Patient signed in as voluntary patient prior to hearing	20	8
Patient came to hearing	72	78
Committed	26	30
Released	46	48
Signed in after release	7	6

pared with 27% for family only, 23% for doctor only, and 0% for neither. No relationship was found between number of previous admissions and outcome of hearing in either study. Both studies found that all patients talked with the patient attorney before the hearing 10-15 minutes on the average. A very high percentage (92%/91%, 1978/1980) felt they were adequately represented by counsel. A large decrease, 39% in the 1980 study compared to 76% of patients in the 1978 study, stated courtroom proceedings were explained to them before the hearing.

In both studies, hearing procedures were evaluated positively by the research associate. All proceedings were characterized by relative absence of background noise, attentiveness of those present, and courteous treatment of the respondent. A large percentage of patients in both studies rated their hearing as fair: 92% in 1978 and 83% in 1980. However, a lower percentage of families responding rated the hearing as fair (67% in 1978), but this proportion increased to 84% in the 1980 study.

We attempted to assess the reality of dangerousness by family questionnaire and analysis of hospital records. A significant proportion of patients were found to have manifested evidence of danger to self or others by action or threat during hospitalization either prior to hearing (17%) or during the remainder of their stay (26%) in the first study and (20%) and (27%) in the second. Forty-two percent of families surveyed checked at least one of four options describing threats or violence to self or others in the first study, and 65% in the second. Twenty-eight percent of the patients rated themselves as dangerous to themselves or others in 1978, and 51% in 1980.

Patient Attitudes: A high proportion of patients (75%) in the 1980 study demonstrated insight into their condition by rating themselves as either dangerous or mentally ill or both. In the 1978 study the figure was 43%. However, the percentage of patients in the 1980 study who said they should have been committed (46%) remained unchanged

TABLE V

Negative Attitudes Toward Commitment Cited by Patients Studied Before and After the 1979 Commitment Law Change

Statement	Proportion of Patients Endorsing	
	1978 Study	1980 Study
Feel bitter or resent commitment	21%	19%
Commitment affected treatment adversely	12%	11%
No one helpful	29%	35%
Feel I have broken law	9%	8%
Mad at someone about commitment	19%	16%
Should be alternatives to commitment	51%	49%

from 1978 (46%). In 1980, 18% of patients checked a blank stating, "It was all a mistake," compared with 22% in 1978. Most patients cited some negative attitudes toward commitment. Table V summarizes the proportion of patients citing negative attitudes toward commitment in the 1978 and 1980 studies. Patients' attitudes toward the legal aspects of the commitment process were surprisingly favorable in both studies. A very high proportion felt they were adequately represented by the attorney (92%/91%) and their hearing was fair (92%/83%). The proportion of patients who felt their privacy had been violated by the commitment procedure declined from 22% in 1978 to 10% in 1980.

Impact of Commitment on Hospital Treatment: The majority of patients were treated with some form of chemotherapy. Drug treatment in the two studies is summarized in Table VI. Only three patients in 1978 and six patients in 1980 received no drug treatment. The largest proportion of patients were treated with antipsychotic agents

alone, or in combination with other agents. Fewer patients were treated with antidepressants, and most of these also received antipsychotic agents. From review of hospital charts, it was difficult to judge accurately the extent to which involuntary hospitalization had affected length of stay and treatment. Physicians do not customarily include reference to such effects in their notes. On the basis of self-rating, 12%/11% of patients felt commitment influenced their treatment process. Twenty-four percent to twenty-five percent of patients were documented as showing some lack of cooperation with treatment procedure.

The Local Committing Physician: In the 1978 study, 56 committing physicians responded to the questionnaire; 33 responded in 1980. However, in the second study, many of the physicians committed more than one of the patients in the study, such that physicians of 56 of the 100 patients responded. A disturbing finding in the 1978 study was that seven of the 56 patients whose referring

TABLE VI

Medication Received by Committed Patients at Broughton Hospital in Two Studies Before and After Passage of the North Carolina Commitment Law in 1979

Medication	Number of Patients	
	1978 Study	1980 Study
Antipsychotic Agents	69	69
with anticonvulsants	6	5
with antiparkinson agents	15	26
ANTIDEPRESSANTS	13	18
with antipsychotic agents	12	12
LITHIUM CARBONATE	7	12
with antipsychotic agents	6	8
MINOR TRANQUILIZERS	4	13
NO DRUGS	3	6

physician responded were unknown to the physician and without record in his office. In the 1980 study, no physicians disavowed knowledge of patients whose commitment papers they had signed. In the 1978 study, only 38% of the patients were new to the committing physician. The majority had been seen for times varying from one to more than five years. In the 1980 sample, 61% of the patients were evaluated by the committing physician for the first time during commitment. Table VII summarizes sources of information cited as used by the local committing physicians in the 1978 and 1980 studies. An increase in citation of the diagnostic interview from 57% to 82% was observed. Other sources commonly cited, such as family members, friends, and police, were similar for both studies. In the 1978 study, half of the physicians cited family insistence to be an extenuating circumstance leading to use of commitment; in 1980, 24% of the physicians cited family insistence. Lack of local resources was cited as a problem leading to use of commitment by 21% of physicians in 1978 and by 31% in 1980.

Physicians were asked whether they felt existing commitment laws were adequate. In 1978, 49% responded no, and in 1980, 53% responded no. A criticism made by physicians in both studies was that many patients were released too soon. Problems with "dangerousness" as a criterion were frequently cited. The need for clinicians to have more control over the process, the slowness of the process, and the

number of evaluations being requested for patients never seen before, were also cited.

Impact of Commitment on Patients' Families: A large proportion of patients' families were active participants in the commitment process. In the 1978 study, 61% of the families initiated the petition; 84% attended the court hearing; and 76% testified. In the 1980 sample, 86% of the families initiated the petition, but the percent of families attending the hearing dropped to 50%, and those testifying to 46%. Evidence of danger cited by families on their questionnaires in both studies (1978/1980) included: violent acts (22%/39%), threat of violence (24%/15%), suicide attempt (8%/8%), and suicide threat (8%/9%). In the 1980 study, failure to care for self was mentioned by 11% of the families. Families viewed the process of commitment negatively in both studies. In 1978, 61% of families felt the patient was released too soon, and this proportion increased to 72% in the 1980 study. The proportion of families who cited that commitment hurt their relationship with the patient (31%) and who felt the hearing unfair (33%) in 1978 dropped to 8% and 16% in 1980. Forty-eight percent of the families in 1978 and 40% in 1980 stated that the commitment process had had some "bad effects" on the family. Emotional upset was given as the bad effect in 53% of the cases in 1978, and 74% in 1980. Damage to relationship with the patient and loss of money and time at work were also mentioned. In the 1980 sample, only 19% of the patients' families talked with the hospital attorney who is responsible for representation of the hospital and family. Of those families who attended the hearing, only 13% were accompanied by a case worker. Both figures represent declines from the earlier study (21% contacted by attorney and 30% accompanied by case worker).

Commitment as Viewed by Hospital Staff: Of the 32 Broughton Hospital employees responding to our questionnaire, 71% cited that they had observed no change in the patient population as a result of the change in the commitment law. Several social workers reported an

increase in willingness to testify on the part of family members, but it was also mentioned that more families are frustrated by the "mechanical" nature of the hearings and feel their testimony has little effect. Fifty-three percent of employees responded that it is easier to get patients committed now than before passage of the 1979 law, but only 29% of hospital staff members stated that the present commitment law is adequate. Reasons given for inadequacy included: inappropriateness of dangerousness as a criterion (9), too strict criteria for establishing dangerousness (1), inadequacy of the 10 days (or less) evaluation period before hearing (2), too much power being vested in those with little understanding of the psychiatric client (1).

Discussion:

Data from the present study suffers from the limitations of a voluntary questionnaire. The loss of data from non-responding subjects in all categories may produce substantial bias of results. However, comparison of the two studies done in an identical manner during similar time periods in 1978 and 1980 may be subject to less distortion. The views reported represent a large proportion of patients and families involved in the commitment procedure and may be considered to reflect general attitudes.

The major purpose of the study was to assess the practical effects of change in the North Carolina commitment law, which was designed to facilitate the commitment process. Demographically, the study populations in 1978 and 1980 were nearly identical. A similar proportion of patients came to hearing, and the proportion of those patients committed at hearing was similar. Hospital records indicate a small increase in percent of patients committed, from 26% to 35%. However, these data are confounded by inclusion of recommitments. Our data, based on two randomly selected samples, indicate that there has been little or no change in the actual process of commitment of newly admitted patients subsequent to the change in law.

TABLE VII

Sources of Information Cited as Used by Committing Physicians in Studies Before and After Passage of the North Carolina Commitment Law in 1979

Source of Information	Percent Physicians Citing	
	1978 Study	1980 Study
Diagnostic interview	57%	82%
Family	65%	43%
Friends	10%	—
Police	33%	47%
Social service agency	4%	—

Patient attitudes toward the commitment procedure were surprisingly favorable. A large majority of patients queried in both 1978 and 1980 felt that their hearing was fair and that they were adequately represented by counsel. Although a proportion of patients ranging from 9% to as high as 35% endorsed a number of negative statements about the commitment process, about half of the patients in both studies stated they should have been committed. An increase of proportion of patients reporting themselves as either dangerous or mentally ill from 43% to 75% was observed from the 1978 to the 1980 study. This increase may be in part due to the change in legal definition of dangerousness. Either from discussions with the patients' attorney or from arguments during the hearing, many patients were aware that inability to care for oneself currently constitutes dangerousness.

The favorable attitudes of patients toward the commitment procedure were not reflected in any other of the groups surveyed. Approximately half of the local physicians participating in the commitment process from both studies responded that they felt commitment laws were inadequate. A very high proportion of families of patients expressed dissatisfaction with the commitment procedure, particularly premature release of the committed patients. In fact, the proportion of families citing premature release as a problem increased from 61% in 1978 to 72% in 1980. Of the Broughton Hospital staff surveyed in 1980, 71% felt commitment laws were inadequate. Thus, the major-

ity of persons participating in the committing process and subsequent treatment are dissatisfied with the commitment process. Comparison of data from the 1978 and 1980 studies demonstrates either no change in attitudes of these groups toward commitment or an increasing dissatisfaction. Since the passage of the North Carolina commitment law was partially in response to dissatisfaction with the commitment procedure on the part of these groups, it must be regarded as a failure with respect to this goal.

Of particular note in both studies was the extreme dissatisfaction of families of patients undergoing commitment. The family participates actively in the commitment process for most patients, usually by initiation of the petition and later by participation in the commitment hearing. The hearing procedures are not scheduled with respect to convenience of family members. For the commitment hearing, all families are notified to be at court at 9 a.m. With an average of 88 cases per week on the docket (sampling weeks only), the average wait before being called into court was 4½ hours, ranging up to 12 hours. Several families, as well as others present to give testimony, had to leave before their cases were called. Other family members cited previous delays of this sort as reason for not appearing in the first place. Such delays were common in both 1978 and 1980. Nearly half of families felt commitment had bad effects on the family, and a larger proportion reported emotional upset resulting from the commitment procedure. These figures showed little or no

change from 1978 to 1980. Families are highly stressed initially by the aberrant behavior of the patient. Violent and dangerous acts on the part of the patient were specified by 22% of families in 1978 and 39% in 1980. They are subjected to unnecessarily long waits before the hearing. Although a hospital attorney has been appointed to represent the hospital and family at the hearing, only 19% of families talked with the attorney before the hearing. There are no other sources of support for the family at Broughton Hospital, although the patient who is committed has a variety of services rendered to him, both diagnostic and therapeutic, before and after the commitment hearing.

The data from the present study clearly indicate that the families of committed patients represent a troubled unit. The usual form of intervention, that of removal and hospitalization of the patient, ignores the problem existing within the entire family unit. The family remains dissatisfied and in need of supportive services. Provision of supportive services for families of disturbed and potentially dangerous patients may be of greater utility than alteration of commitment laws in the alleviation of current dissatisfaction with the commitment process.

Acknowledgment

This research was supported by grants from the Small Grants Program of the North Carolina Division of Mental Health and Development Disabilities.

Reference

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Perhaps the most valuable result of all education is the ability to make yourself do the thing you have to do, when it ought to be done, and whether you like it or not; it is the first lesson to be learned; and, however early a man's training begins, it is probably the last lesson that he learns thoroughly.

Technical Education

Toxic Encounters of the Dangerous Kind

THE NUTMEG CONNECTION

When the economy takes a turn downward, much of the business community suffers — regardless of the size or type of industry. The consumer suffers also — prices go up and some items get scarce. This condition is also true of the illicit drug market. The “turn-ons” of choice become more expensive and harder to find. When such a condition occurs in the “drug community” new “highs” are often produced or old ones resurrected to be sold to a demanding public. Such is possibly the case with nutmeg.

Nutmeg has been used as a hallucinogen since the time of the Crusades. It is alleged that it was introduced into Europe by the Arabs. This commonly used spice comes from the dried seed kernels of a tree grown in the South Pacific and East Indies. It has been used since the Middle Ages as a carminative, stimulant, narcotic, emmenagogue and abortifacient. This report concerns itself with the diagnosis and management of nutmeg toxicity.

The purpose of taking nutmeg is to produce a “high,” i.e., a mind-altering experience. This is usually achieved by the ingestion of 1-3 whole nutmegs or 5-15 grams of the grated spice (a can of McCormick’s nutmeg weighs 75 grams; 2 tablespoons of this is equal to approximately 14 grams or the equivalent of two grated nutmegs). In 2 to 6 hours after ingestion, euphoria and hallucinations can occur. The “trip” resulting from this encounter can last nine hours or more. The toxic effects of nutmeg overdose in an adult can occur with the ingestion of as little as 5 grams. This overdose resembles an anticholinergic toxic episode — cutaneous flushing, tachycardia, decreased salivation, fever and central nervous system (CNS) excitation. In many cases the resemblance to anticholinergic poisoning (atropine, belladonna, antihistamines,

Jimson Weed, etc.) can be confusing but in the classic case, nutmeg poisoning produces *miosis* and not *mydriasis* as with an anticholinergic poisoning. This is not an absolute distinguishing feature, of course, but should be looked for.

Nutmeg overdose can also cause burning epigastric pain with or without emesis, abdominal cramps and vertigo, especially if the nutmeg is not fresh. For some of us the toxic encounter with nutmeg will probably occur when we are presented with a patient who is undergoing an acute psychotic episode resulting from the accidental or purposeful overdose. Such a patient shows dramatic clinical features such as marked CNS excitation, hallucinations (especially visual) with spatial and color distortions along with feelings of unreality and depersonalization. These patients can be quite hyperactive and belligerent and thus resemble those who have taken PCP (angel-dust). The clinical course may be severe with shock, coma and even death as a consequence; usually complete recovery occurs within 24 hours. The principal active ingredient causing the anticholinergic type of syndrome is *myristicin* but nutmeg also contains *elemicin* which can be metabolized to two psychotomimetic amphetamines whose psychodelic and physiological effects resemble LSD.

The treatment of nutmeg toxicity is mainly supportive as no antidote is available. It seems to me that if ever I needed an hallucinogen it would not be *nutmeg*; if you can’t afford the good stuff, don’t indulge. I prefer smoking banana peels — if the truth were known.

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Editorials

LAENNEC'S PARADIGM

Now that the bicentennial of the birth of René Théophile Hyacinthe Laennec has safely passed, we can ponder on the attention given such random dates as birthdays. Specific they may be for the individual but certainly hardly predictive of future achievement. Better we should celebrate as Laennec's day August 15, the bicentennial of his greatest achievement, for *De l'Auscultation médiate*, his description of his adventure with his stethoscope, which first appeared on August 15, 1819. Its subtitle, *Traité du Diagnostic des Maladies des Poumons et du Coeur*, clearly presages the medical revolution it provoked. Yet many of his contemporaries could not grasp the significance of Laennec's work and protested the indelicacy of applying the stethoscope to the female breast.

Stethoscope was a noun of Laennec's own construction from Greek words meaning to inspect the chest. The four divisions of physical examination of the chest: inspection, palpation, percussion and auscultation, would be some time in their establishment. Percussion itself was a diagnostic child, Auenbrugger's *Inventum Novum* having appeared in 1761. But 47 years passed before a translation from Latin to English by Jean Nicolas Corvisart, one of Laennec's teachers at the Salpêtrière and Charité hospitals in Paris, was published in 1808. Laennec must have been well prepared in such an environment to be a pioneer in correlating physical and pathological findings in diseases of the heart and lungs. In effect he was taking Morgagni's *Seats and Causes of Diseases Investigated by Anatomy*, published also in 1761, from the dissecting table to the bedside and making it essential for the clinician to return to gross and microscopic anatomy in the practice of his art.

In transforming physical diagnosis Laennec initiated a paradigm, Kuhn's term for the phenomenon which permits the consolidation of accumulated scientific achievement into a new mode of learning and doing.¹ As such it is the quintessence of normal science, firmly based on its sound past, as it supplies "the foundation for its future practice." Laennec's paradigm ruled clinical medicine for more than a century and still competes, more than symbolically, with the new paradigm of measurement and may be reasserting itself in the productive non-invasive examination of the human body.

For stethoscopy was the first dramatic penetration of the skin to give knowledge without altering that barrier. Perhaps then the advent of radioisotopic diagnostic procedures, ultrasound examinations, computerized tomography and nuclear magnetic resonance is not truly representative of a new paradigm

but a marvelous expansion of the old. By contrast the chemical invasion of medicine dating ultimately to Wohler's* synthesis of urea in 1828 may be the new paradigm, offering accurately reproducible measurement of discrete entities in body fluids and tissues.

Medicine seems to require convergence of different paradigms. Scientific and technological contributions in physics, biology and chemistry are more obvious because of their structure and validation, whereas the offerings of psychology, sociology, and economics are not yet miscible because they so frequently defy objective testing and measurement. As neurochemistry evolves, we may see some resolution of the uncertainties we face in the analysis of human behavior. But in the affective domain, where lie culture, character and intelligence, we cannot yet almost by definition expect a fruitful paradigm. For there are always those whose temperaments lie in the realm of the metaphysical and others who must have verifiable data for their testing of reality.

Laennec's paradigm, as must all paradigms, has invaded the market-place and has made many comrades in sound without their knowledge. Acoustic emissions from bones are being studied although these sounds can hardly be classified as wet or dry rales, crackles or wheezes. Even the music of the spheres has been recorded as Voyager 2 data acquired during the course of its adventure with Saturn has been processed through a 16-channel music synthesizer. While the music heard must be aleatory, we are told it haunts the mind.

Advertisers have long understood that the symbols of medicine, the white coat and the stethoscope, help when consumers are being urged to "trust me." While the white coat sells antihemorrhoidal preparations and headache remedies, the more prestigious stethoscope is used in quality control in the manufacture of the Rolls-Royce, to assure quietness and to exclude the music of the spheres and earthly noise.

Automobile mechanics though have been following Laennec's path for a long time. Some use a metal rod in place of the bell or diaphragm and apply their stethoscopes to block, water pump, flywheel or brake drum to detect signs of pathologic friction or arrhythmias. In Model T days, pioneer automotive stethoscopists used as did Laennec the monoaural technique. One to my knowledge placed his thumb on one end of a hearthbroom stick and the other end on the target organ of the engine. He then applied an ear to his

*Friedrich Wohler (1800-1882) received his degree in medicine and surgery in 1823 before pursuing chemistry. His synthesis of urea helped vanquish vitalism from scientific laboratories, a necessary step in the evolution of the chemical paradigm.

thumb and made his diagnosis. Scientists are where you find them.

J.H.F.

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THE CORPOREAL ORCHESTRA

Medical schools 35 years ago bore little resemblance to today's temples of learning. Syphilis and pneumococcal pneumonia were finally being brought low by penicillin, malaria was giving up, grudgingly, its ascendancy in the South, and streptomycin held some promise as an antituberculous drug. But osteology still maintained its place in anatomy, the view presumably being that each bony prominence and each portal for a penetrating vessel had spiritual, if not material, importance.

Physical diagnosis still held a prominent place in the curriculum in the second year when the mysteries of auscultation were particularly emphasized. Students practiced on each other to learn the normal and struggled to grasp the importance of rales and to appreciate the necessity of classifying them. Our texts went into inordinate detail so that when we examined our first patients we applied stethoscope with fear and trembling to expectant chests. We tried to ascertain frequency, pitch, amplitude, duration of sounds, quality, and intensity, and failed utterly. Finally we gave up and let our ears learn for us. Had we aspired to be acoustical engineers, we would not have gone to medical school and we would have sought better instruments for sonic analysis.

Fortunately, antibiotics and more frequent chest x-rays made auscultation of the chest less necessary in diagnosis and management of the sick, so that some now consider the stethoscope an historical relic, a medical equivalent of the caveman's flint. But we cling still to the instrument as a symbol of the laying on of hands. The tubes become conduits for communication but we don't receive many messages about egophony and pectoriloquy anymore.

The retreat of auscultation should lead us to listen more carefully to other human sounds. After all is not the rite of masculine passage heralded by embarrassing vocal changes, sign and symptom of the arrival of testosterone, and cannot a mother diagnose her baby's predicament by a cry, without conscious sonic analysis? Have not many church choirs in small American towns given unknowingly a course in the natural history of hypothyroidism? First a slender young soprano, then a more matronly alto, finally a dry-skinned, round-faced bass before thyroid extract restores the soprano voice, if not the maidenly figure.

Mental states in adults as well as babies may be manifested by changes in vocal sound. Ostwald has confirmed by objective sonic analysis what we have known all along about the effects of anger, anxiety, excitement, and depression on speech and has sug-

gested that such analysis deserves wider application in psychiatry.

Listening to breath sounds at the mouth may be helpful too. Noisy breathing points to chronic pulmonary disease and many a thin wife of a fat husband has been concerned about his snoring and episodic apnea, so characteristic of nocturnal respiratory obstruction. The loudness of these sounds at the mouth does indeed reflect the severity of obstruction and indicates turbulence of air flow through a narrowed bronchial tree. That variations in the intensity of such noise correlate with the degree of obstruction can be neatly demonstrated by listening carefully to an asthmatic patient before and after the administration of effective bronchodilators. Comparison with measurements of expiratory volume at one second (FEV₁) and other indices of air flow offers adequate confirmation of the accuracy of one's ear.¹

Also easily audible at the mouth are belches, burps and rifts, eructations from the stomach — of more social than medical significance. These sounds have escaped extensive analysis except when aerophagia is considered. Air swallows also complain, not surprisingly, of excessive abdominal gas leading one British author to write of flatus ↑ and flatus ↓. Suppression of flatus ↓ leading to increased pressure within the unvented colon and rectum has been implicated in the causation of diverticulosis. If this hypothesis can be confirmed, a strong case for diverticulosis and diverticulitis as social diseases could be made.

Nowhere is the corporeal orchestra more in evidence than on auscultation of the empty abdomen. The patient who skips breakfast because of anticipated blood tests is a particular problem because even the most careful listener cannot distinguish the arterial bruit suggestive of renal arterial stenosis or abdominal aortic aneurysm from peristaltic assertion. Often patients are quite distressed by their own borborygmi which keep them company at night before they fall asleep. In a way what they hear is noise akin to that an orchestra makes warming up and to chatter in the auditorium before the entrance of the concertmaster. The abdominal groans are quieted by eating just as the audience is stilled by the conductor's baton.

Other sounds deserve extensive comment but can be noted only briefly. Many of us will never hear the whistling pneumothorax or the succussion splash so fondly referred to by the phthisiologists of yore. But we will all too soon reluctantly listen to our own creaking knees and grating cervical vertebrae as we develop the medical judgment that comes with the maturing of enthusiasm and the aging of joints.

J.H.F.

Reference

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ERRATUM: On page 226 of the March 1982 NCMJ under "Does the Seabright Bantam Have the 'Seabright Bantam Syndrome'?" the first sentence of the second paragraph should read: Pseudo-hypoparathyroidism differs from hypoparathyroidism in that patients with the former who are given parathyroid hormone intravenously do not have the expected phosphate diuresis nor do they excrete increased amounts of cyclic AMP.

From The Desk of The Managing Editor

STATE INVOLVEMENT IN SCIENCE AND TECHNOLOGY

James B. Hunt, Jr.
Governor, State of North Carolina

Note: In light of the recent articles on hazardous waste (see April and May 1982 NCMJ) which spoke to the issue of medicine's and government's roles in the current technological/chemical revolution and in light of North Carolina's unique position with its medical schools, School of Public Health at the University of North Carolina, and Research Triangle Park, the following article is offered.

A.A.H.

Much has been accomplished over the last 30 to 40 years by our prevailing structure of science and technology. Now, however, a crisis is emerging: U.S. output per man-hour has leveled off or declined in recent years. Results of basic research no longer percolate through our economy fast enough or effectively enough to increase productivity substantially. Education in the United States is less rigorous than that of several other nations. And we have not devised the organizational means to generate and use knowledge of how to manage land, water, and air resources properly and to minimize dangers associated with toxic, hazardous, and low-level radiation waste.

In dealing with the emerging crisis, we must foster throughout society the creative potential of science

and technology by technical and organizational innovation, which together constitute technological innovation. I contend that the center of gravity for technological innovation must shift from the federal government to state governments.

Of the 184 research universities of this nation, 119 are public institutions, most of which are supported by state governments. Elementary and secondary educational systems are the responsibility of state and local governments, who (regardless of action by the federal government) must take the lead if significant improvements are to be achieved. State and local governments are the prime points of contact with the many aspects of economic activity that entail industry-government interaction. Finally, people are essential in technological innovation, and people can more easily relate to state and local governments than to distant federal agencies.

The experience of North Carolina and a few other states illustrates how a state government can forge these various interrelations. The North Carolina Board of Science and Technology is the unit that maps much of our strategy, building on the work of our universities and the influence of our Research Triangle Park. I chair this 15-member board; the remaining members are scientists from our public and private research institutions and officials from state and local government. Other groups advise me; one is a council of business leaders from across North Carolina. As a consequence, new industrial investment in North Carolina has averaged approximately \$2 billion per year for the past 5 years. Our unemployment rate is about 2 percent below the national rate.

In North Carolina we are also investing in people, particularly young people. In our elementary and secondary schools, we have introduced competency testing, raised the level of teacher training and pay, reduced class size, and taken other measures to improve education. Significant improvements in national test scores are one indication that these changes are having an effect. In addition, we have established the North Carolina School of Science and Mathematics, a residential high school for students with very high aptitudes in these subjects. In its first year, with 150 students enrolled, this school had the second largest number of National Merit Scholarship semifinalists of any school in the nation.

My last example consists of our Microelectronics Center and our Biotechnology Center. The former is designed to enable six leading research institutions in North Carolina to have access to sophisticated microelectronics research equipment on a sustained basis. The latter is beginning on a relatively small scale, but represents a long-run commitment to this



Governor James B. Hunt, Jr.

field. Other states, such as California, Minnesota, Michigan, and Florida, are taking significant action in relation to such fields of exploration.

Technological innovation must be construed as more than an end in itself. Its larger purpose is meeting the needs and desires of people. This is a function of values and beliefs and of political and economic processes. The emerging crisis I have mentioned is a reflection of such concerns. Government — particularly state government in partnership with academia, industry, and people — has a clear responsibility in resolving this crisis.

Adapted from an address presented on 4 January 1982 at the AAAS Annual Meeting. Reprinted with permission from *Science* Vol. 215, p. 617, 5 February 1982. Copyright 1982 by the American Association for the Advancement of Science.

MID-WINTER CONFERENCE 1982: HEALTH CARE COST CONTAINMENT

“Medicine in the '80s” was the theme for this year’s Mid-Winter Conference held in Winston-Salem, and, appropriately depicting the '80s, health care cost was the subject most discussed (as it was at the Executive Council meeting held during the Conference — see May 1982 *North Carolina Medical Journal*). Cost containment, its current status and its future, proved to be a stimulating topic for speaker, participant, and observer alike.

The speakers, representing medicine, hospitals, business, and government, all agreed that physicians are important in developing solutions of the cost containment problem. As panelist Lawrence Cutchin, M.D., said, “. . . I don’t believe effective cost containment can be implemented without the active and informed involvement of physicians.” There was also general agreement with regards to the causes of increased health care costs, as outlined by Cutchin:

- Physicians, concerned with providing quality care, have not in the past had to consider the cost of care.



Lawrence Cutchin, M.D.
“I don’t believe effective cost containment can be implemented without the active and informed involvement of physicians.”



Greg Holthusen, M.D.
“... maximize the value of health care expenditures through the joint efforts of business, physicians, hospitals, and the community without reducing the quality of care. . . .”

- Patients, most of whose medical costs are paid by government or insurance, have not been made sufficiently aware of the problem.
- Insurance companies, able to increase charges to keep up with pay-out, have not been active enough.
- The hospital industry, with complex government regulations, higher costs for technology and energy, rising utilization of services, and salary increases, has suffered much from inflation. Not wanting to cut services and being reimbursed according to cost, hospitals have not been able to improve efficiency in cost effectiveness.
- Government, attempting to solve all the problems with limited resources, has fueled inflation by improper regulation and inappropriate spending.

This is not to say that the wheels are not turning. Physicians, business, hospitals, and government are working to find alternatives, and, indeed, some solutions are already apparent.

One example, as reported by Greg Holthusen, M.D., is a physician-business-hospital coalition in Winston-Salem. The Medical Society, through its Health Planning Committee, of which Holthusen is chairperson, initiated the coalition in May 1981. “Efficiency and accountability are integral to the makeup and success of [business]. Unlike the federal government, business can move quickly to deal with what they perceive as an economic drain,” Holthusen explained. Its members now include representatives of six corporations, three hospital administrators, and three members of the Medical Society representing both the medical school and the private community. “To maximize the value of health care expenditures through the joint efforts of business, physicians, hospitals, and the community without reducing the quality of care” is the coalition’s statement of intent.

Having developed a list of strategies and priorities,

the group began with the promoting of outpatient surgery which involved patient and employee education, physician education, and health coverage changes. All are enthusiastic about the program; others underway include:

- Promotion of other outpatient services — e.g., preadmission testing
- Employee wellness programs
- A common disability back-to-work form which would be utilized by and accepted by all companies and more easily filled out by physicians
- A study of emergency room use at both Forsyth and North Carolina Baptist Hospitals, specifically addressing the question of whether patients actually need to come to the emergency room or could have gone to a doctor's office
- The promotion of cost containment through peer review, specifically endorsing the contracting for private peer review on hospitalized company employees with Piedmont Medical Foundation
- The planning of a health supplement for publication in Winston-Salem newspapers in which these and other health issues can be brought before the public
- Discussion of present and projected hospital and nursing home bed needs in the area

Another example of cost containment measures in use today can be found within the hospital industry itself. Citing the fact that "... hospital management [is] making adjustments in planning so as to contain costs as much as possible within the scope of the inflationary economy we are now experiencing..." Earl Tyndall, Jr., of Medical Park Hospital discussed several methods, among them:

- Non-duplication of services within a given geographic area — e.g., technological and clinical services
- Joint purchasing or shared purchasing — e.g.,



Earl Tyndall
 "... hospital management [is] making adjustments in planning so as to contain costs..."



Representative Dennis Wicker
 "In a day and time in which you are trying to keep people out of the hospital and encourage outpatient surgery, it made little sense to me to bring yet another group of providers into the hospital setting."

- bids are submitted to a group of hospitals rather than one hospital
- Energy conservation — e.g., more efficient apparatus
- Public awareness — e.g., hospitals that are members of the Voluntary Effort routinely provide physicians with a patient's bill, including charges for particular items
- Marketing of services to other hospitals or industry
- Mergers of hospitals — e.g., acquisition mergers or consortiums which reduce risk and administrative and technological costs

Representative Dennis Wicker (D-Lee) offered state government's point of view and showed his concern that many legislators, ignoring the high cost of technology, would require the best in health care — and therefore its tools — while wanting to slow the rate of cost. This basic inconsistency aside, state government has enacted some laws to stimulate cost containment: enabling legislation for the operation of HMOs and IPAs, a generic drug substitution law, and ancillary provider practice acts which do not unnecessarily expand the scope of the practices. In reference to efforts to mandate hospital staff privileges for podiatrists Wicker offered, "In a day and time in which you are trying to keep people out of the hospital and encourage outpatient surgery, it made little sense to me to bring yet another group of providers into the hospital setting."

While expressing grave doubts about the concept of a hospital rate commission, Wicker warned the audience that such was not a dead issue in North Carolina. Other possibilities that the General Assembly could consider include further legislation to stimulate the growth of HMOs and IPAs (e.g., low cost loans to groups starting such programs, the establishment of a foundation to attract private capital) and a mandatory drug substitution law.



Sarah T. Morrow, M.D., M.P.H.
 "How do we continue to respond to the needs of North Carolina's citizens? How much is society willing to pay?"

Photos by April Hart

Governmental pressure to slow the growth of health related expenditures is found at both the state and federal levels. Sarah T. Morrow, M.D., M.P.H., Secretary of North Carolina's Department of Human Resources, discussed the impact of President Reagan's proposed "New Federalism" upon our state, saying that, while she supported the principles guiding "Reaganomics," the "... fairness and practicality of the proposed financing and its impact on the overall human service system in North Carolina ..." must be examined closely.

Some of the federal proposals are:

- The exchange of the Medicaid and Aid to Families with Dependent Children (AFDC) programs: The federal government will pay the full cost of Medicaid, and the state, of AFDC, which will cost North Carolina \$193 million
- Turning back to the states the control and financing of 43 other programs, which will cost North Carolina \$190 million

- Reduction of federal funding of HSAs
- State governments being asked to pick up 25% of the cost of PSROs
- Block grants of federal monies for particular programs, most of which will experience cut-backs (North Carolina is already working on those that have come to the state.)

The effect of these proposals is to place the burden of answering the questions, in Morrow's words, "How do we continue to respond to the needs of North Carolina citizens?" and "How much is society willing to pay?" Given the state's very limited resources, efforts must be made to reduce the number of available services or the number of people served. In the past North Carolina has been more generous in the number of optional services provided while more conservative as to the number of people served. The Department of Human Resources is looked to for help in defining whose need is the greatest and how to best respond to those needs.

Morrow called upon physicians to continue to work with government in providing care for the poor (in particular, primary care and prevention services). Citing the need to reduce federal intrusion and standardization, she called upon hospitals to continue to make the Voluntary Effort work.

The many causes of rising health care costs involve us all. We must all become involved in slowing the trend.

A.A.H.

REGARDING CONTRIBUTIONS

On page 431 of this issue you will find a "filler" submitted to the *Journal* by J. Ross Shuping, M.D., of Greenville, North Carolina. We do select this copy and therefore solicit such contributions from readers and members. Any subject matter, any bit of information (a favorite recipe?) that you would like to share is welcome. (Please note, however, copyright limitations if they apply.)

A.A.H.

JOHN ABERNETHY [1764-1831]

There is no short cut, nor "royal road," to the attainment of medical knowledge. The path which we have to pursue is long, difficult, and unsafe. In our progress, we must frequently take up our abode with death and corruption; we must adopt loathsome diseases for our familiar associates, or we shall never be thoroughly acquainted with their nature and dispositions; we must risk, may even injure, our own health in order to be able to preserve or restore that of others.

Hunterian Oration, 1819

Bulletin Board

New Members

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McLean, Walter Copley, Jr., (OPH) 31 White Oak Road, Asheville 28803

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Hardeman, Richard A., (FP) P.O. Box 45, Grover 28073
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Willmot, Michael Henry, (GS) 916 Overbrook Drive, Thomasville 27292

Yelton, Blane Wesley, Jr., (IM) 1057 Randolph Road, Thomasville 27360

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Klein, Howard William, (RESIDENT) 18 Balmoray Court #20, Durham 27707

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Spees, David Neal, 244 South Street, Box 717, Davidson 28036

Vaughn, Robert Dee, Jr., (GS) Suite 415, 951 S. Independence Boulevard, Charlotte 28202

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Fisher, James Lee, (IM)118 Rock Creek Drive South, Jacksonville 28540

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Carlton, William Yarborough, (RESIDENT) 309 Lindell Road, Greenville 27834

Iaves, Peter Gene, (RESIDENT) Box 173, Route #2, Walstonburg 27888

Wimmer, John Easter, Jr., (PD) P.O. Box 579, Grimesland 27837

RICHMOND

Howell, Edgar Vaston, Jr., (ORS) 400 E. Washington Street, P.O. Box 1148, Rockingham 28379

WAYNE

Brubeck, Ellen Temple, (FP) 238 Smith Chapel Road, Mount Olive 28365

What? When? Where?

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME programs sponsored or cosponsored by these schools automatically qualify for AMA Category I credit toward the AMA's Physician Recognition Award, and for North Carolina Medical Society Category A credit. Where AAFP credit has been requested or obtained, this also is indicated. 2. The "place" and "sponsor" are indicated for a program only when these differ from the place and source to write "for information."

In-State

July 8-10

"Fourth Annual Mountain Meeting"

Place: Asheville

Fee: \$125

Credit: 12 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

July 16-18

"Psychological Aspects of Lung Disease"

Place: Black Mountain

Info: Judith Carter, Office of Continuing Education, UNC-CH, School of Public Health 251H, Chapel Hill, NC 27514, 919-966-4032

July 17-18

"Dermatology for the Non-Dermatologist"

Place: Boone

Fee: \$75

Credit: 7 hours (AAFP applied for)

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

July 19-23

"Southern OB-GYN Seminar"

Place: Asheville

Info: W. Otis Duck, M.D., Drawer F, Mars Hill, NC 28754

July 26-30

"Diagnostic Imaging Postgraduate Course"

Place: Atlantic Beach

Fee: \$375 (\$200 if in training)

Credit: 25 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology — Box 3834, Duke University Medical Center, Durham, NC 27710

August 28-29

"Dermatology for the Non-Dermatologist"

Place: Boone

Fee: \$75

Credit: 7 hours (AAFP applied for)

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

September 8

"Cancer Day 1982"

Place: Greenville

Fee: \$50

Credit: 6 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

September 10-11

"Intraocular Lens Implantation Workshop"

Place: Chapel Hill

Fee: \$50

Credit: 16 hours

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

September 12-16

"Family Medicine Review"

Place: Winston-Salem

Fee: \$345

Credit: 40 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

September 23-26

"Urologic Malignancies"

Place: Pinehurst

Credit: 16 hours

Info: Linda Mace, Assembly Secretary, Box 3707, Duke Hospital, Durham, NC 27710

September 24

"Fourth Annual Health Law Forum"

Place: Greenville

Fee: \$100

Credit: 7 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

September 28

"The Role of Physician and Minister in Patient Care"

Place: Greenville

Fee: \$25

Credit: 3 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

Out-of-State-Southeastern Region

July 7-10

"Cardiology 1982: A Comprehensive Review of the Latest Techniques and Developments in the Field of Cardiology for the Practicing Cardiologist/Internist"

Place: Knoxville, Tennessee

Info: Extramural Programs Dept., American College of Cardiology, 911 Old Georgetown Road, Bethesda, MD 20014

July 12-14

"Clinical Gastroenterology"

Place: Hilton Head, South Carolina

Fee: \$200

Credit: 12 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

Indications

Cyclacillin has less *in vitro* activity than other drugs in the ampicillin class and its use should be confined to these indications: Treatment of the following infections:

RESPIRATORY TRACT

Tonsillitis and pharyngitis caused by Group A beta-hemolytic streptococci
Bronchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)
Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*
Acute exacerbation of chronic bronchitis caused by *H. influenzae*
*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings Cyclacillin should only be prescribed for the indications listed herein.

Cyclacillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclacillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclacillin is given to a nursing woman.

Adverse Reactions Oral cyclacillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclacillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See WARNINGS) Other less frequent adverse reactions which may occur and are reported with other penicillins are onemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment of at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclacillin is not indicated in children under 2 months of age.

Patients with Renal Failure Cyclacillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see DOSAGE AND ADMINISTRATION in package insert).

Dosage (Give in equally spaced doses)

INFECTION	ADULTS	CHILDREN*
Respiratory Tract		
Tonsillitis & Pharyngitis	250 mg q.i.d.	body weight < 20 kg (44 lbs) 125 mg q.i.d. body weight > 20 kg (44 lbs) 250 mg q.i.d.
Bronchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day† q.i.d.
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day† q.i.d.
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults

†depending on severity

July 27-31

"Fifth Annual Symposium on Contemporary Clinical Neurology"
Place: Hilton Head Island, South Carolina
Info: Mrs. Joan Sullivan, Dept. of Neurology, Vanderbilt University School of Medicine, Nashville, TN 37212

August 2-7

"Tenth Annual Beach Workshop"
Place: Myrtle Beach, South Carolina
Fee: \$175
Credit: 20 hours
Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

August 5-7

"The 4th Annual MCV Pediatric Primary Care Conference: Pediatrics at the Beach"
Place: Virginia Beach, Virginia
Info: Kathy E. Johnson, Box 48, MCV Station, Richmond, VA 23298, 804-786-0494

August 13-14

"EKG Interpretation and Arrhythmia Management"
Place: Nashville, Tennessee
Fee: \$245
Credit: 13 hours, Category 1; 13 hours, AAFP
Info: IMEC, Division of Postgraduate Education, 64 Inverness Drive East, Englewood, Colo 80112, 800-525-8651

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh, 27611, two months prior to the month in which they are to appear. A "request for listing" form is available upon request.

North Carolina Medical Society Auxiliary

LIFE BEYOND RESIDENCY

Since June is the month when many physicians complete years of training and enter medical practice, the Forsyth-Stokes-Davie Medical Auxiliary sponsored this spring a meeting of spouses of "graduating" residents. Those who attended exemplified the diversity of medical families who will be moving into communities all over the country. Some were newlyweds, others had pre-teen children; they spanned a decade in ages; some chose to be at home, others were involved in careers; most knew where they would be moving; a few were still not sure.

We "old-timers" related our personal experiences as members of the American Medical Association Auxiliary over the years, and I learned that we too have a variety of backgrounds and interests. As our county auxiliary president described activities sponsored by physicians' wives in the past and present, it became obvious that despite the heterogeneous backgrounds of auxiliary members we had banded together in this organization and had found support both in our personal and public lives.

(continued on page 450)

Compared to amoxicillin

Faster peak. Fewer problems.

... in infants and children

Cyclapen®-W (cyclacillin) produces twice the peak serum concentration* (15.6 mcg/ml versus 7.3 mcg/ml) in half the time (30 minutes versus 60 minutes).¹

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(cyclacillin) Tablets/Suspension

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otitis media[†]
and strep
pharyngitis[†]
in children

*Rapidly excreted unchanged in urine. Clinical efficacy may not always correlate with blood levels.

†Due to susceptible organisms.

1. Ginsburg CM, McCracken GH Jr, Zweighaft TC, Clahsen JC: Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother* 19:1086-1088 (June) 1981.

2. Multicenter trials. Data to be published.

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See important information on adjoining column.

Wyeth Laboratories
Philadelphia, Pa 19101

As the evening progressed we found ourselves talking about the comfort we had felt in knowing other physicians' wives and realizing that we were all facing similar stresses — the frustration of going alone to a family picnic or arriving late for a surprise party. We discovered that as young wives our experiences were not unique but were common in medical families. We were sure that at auxiliary meetings we would not hear complaints about the high cost of medical care or the long wait to see a doctor. It was the one gathering where we could relax with others who understood the realities of medicine.

We hear and read much today about support for the family of the impaired physician. We must not forget to support the healthy medical family as well. Some of our graduating residents will be entering practice in North Carolina in July and August, and auxiliary membership chairmen and local physicians' spouses will warmly welcome the newcomers. I hope that the auxiliaries will identify themselves openly as a support group for these new medical families who are making a difficult transition from training to practice. Support is especially needed at this stage of the medical family's life cycle. Some physicians will be entering practice with large debts to be repaid. All will be anxious about their economic prospects in their chosen communities. Moving can create stress within even the most stable family. Having a supportive group of medical

families with whom to discuss expectations and fears can ease the strain.

Those county auxiliaries which have residency programs in their counties can offer a referral service for the departing residents — names can be sent to other state membership chairmen as well as the county membership chairmen within North Carolina. This gesture of caring as they leave will demonstrate concern for their future as well as give them an anticipation of welcome wherever they are moving. The personal support extended will pay dividends not only for the individual medical families but also for the future of medical care. Those medical families who feel supported by their colleagues will be better able to serve their chosen communities.

Anita D. Taylor
Winston-Salem, N.C.

News Notes

East Carolina University School of Medicine

Two Department of Biochemistry faculty members published an article in the January issue of the *Journal of Applied Physiology*. The article, co-authored by associate professors G. Lynis Dohm, George J. Kasperk and former assistant professor of surgery Andre M. van Rij, is entitled "Increased Excretion of Urea and N^T-methylhistidine by Rats and Humans After a Bout of Exercise."

Dr. R. Stephen Porter, assistant professor of family medicine, and Dr. Gary I. Levine, instructor of family medicine, have received \$49,752 from Glaxo, Inc., to conduct "A Multicenter Randomized Study to Compare the Efficacy and Safety of Ceftazidime and Cefamandole in the Treatment of Lower Respiratory Tract and/or Systemic Bacterial Infections."

Health Sciences Library Director, Dr. Jo Ann Bell and Benjamin Fryser, medical librarian, have received committee appointments to the Medical Library Association.

Bell was appointed for a three-year term on the recertification committee and Fryser for a three-year term on the surgery and statistics committees.

Dr. Harold J. May, director of behavioral science for the Department of Family Medicine, published an article "SIDS Family Adjustment Scale: A Method of Assessing Family Adjustment to Sudden Infant Death

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Syndrome" in the March issue of *Omega: Journal of Death and Dying*.

May also presented a paper in March at the Society of Teachers of Family Medicine Conference held in Kansas City. May's presentation was "Family Interviewing Following the Death of a Child."

Dr. Dennis A. Revicki, research coordinator for the Department of Family Medicine, recently attended the meeting of the American Educational Research Association in New York. During the meeting Revicki presented "The Relationship Between Self-Concept and Achievement: An Investigation."

Dr. Theodore Kushnick, professor of pediatrics and director of the Developmental Evaluation Clinic, collaborated with New Jersey Medical School physician, Bernard Adler, on an article appearing in the January issue of *Pediatrics*. The article is entitled "Genetic Counseling in Prenatally Diagnosed Trisomy 18 and 21: Psychosocial Aspects."

Dr. Donald R. Hoffman, associate professor of

pathology and laboratory medicine, published two articles appearing in the February issue of *Annals of Allergy*. The articles are "Allergens in Hymenoptera Venom. IX. Species Specificity to Polistes (Paper Wasp) Venoms" and "Allergens in Hymenoptera Venoms. VIII. Immunologic Comparison of Venoms from Six Species of *Vespula* (Yellow Jackets)."

Chris A. McDonald, research assistant, collaborated with Hoffman on the articles.

Dr. Richard S. Marx, assistant professor of medicine, attended the regional meeting of the American College of Physicians held in Winston-Salem. During the meeting, Marx presented a "Clinical Approach to Lymphadenopathy and Fever."

Dr. Linda Z. Nieman, assistant director of the School of Medicine's Center for Medical Education and Evaluation, attended the February meeting of the Eastern Educational Research Association where she presented the paper, "Assessing Individual Differences in Stereotypes of Women."



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Two School of Medicine faculty members recently collaborated with faculty from East Carolina University's School of Allied Health on an article which appears in the January-February issue of *Annals of Otology, Rhinology and Laryngology*.

Dr. Jack E. Brinn Jr., associate professor of anatomy, and Dr. Robert S. Fulghum, associate professor of microbiology, co-authored "Comparative Anatomy of Eustachian Tube and Middle Ear Cavity in Animal Models for Otitis Media" with Dr. Hal J. Daniel III and Kathryn A. Barrett.

Support for the research was provided in part by Sigma XI, East Carolina University Research Council, N.C. United Way, and the Deafness Research Foundation.

In addition, Fulghum and Brinn traveled to the 82nd Annual Meeting of the American Society for Microbiology in March that was held in Atlanta. They presented a slide session entitled "Induced Otitis Media in Chinchillas and Gerbils."

Dr. Robert E. Thurber, professor and chairman of the Department of Physiology, has been appointed to the American Heart Association's Committee on Re-

gional/National Research. Thurber also was elected chairman of the Middle Atlantic Research Certification Committee.

Dr. Alvin Volkman, professor of pathology and laboratory medicine, authored "Resident Macrophage Proliferation in Mice Depleted of Blood Monocytes by Strontium-89." The article appears in the February issue of *Laboratory Investigations*.

Dr. Jarrett Barnhill, Jr. assistant professor of psychiatric medicine, was a visiting professor during March for the Department of Neuropsychiatry and Behavioral Science at the University of South Carolina School of Medicine. Barnhill presented "Recognition and Treatment of Depression in Office Practice" while he was in Columbia.

Dr. Loretta Kopelman, associate professor of pediatrics and director of humanities, has been named
(continued on page 454)

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Comparison of propranolol
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antihypertensive therapy
Conclusion: when added
to a thiazide diuretic, reser-
pine was effective in a larger
percentage of patients (88%)
than was propranolol (81%)!

HDFP Study²

- More than 10,000 patients studied
- Conducted at 14 centers over 5 years
- Proved that compliance with Step Care lowers death rate from all cardiovascular causes
- **Conclusion:** reserpine-thiazide regimens were preferred for Step-2 therapy, and were deemed effective, without significant adverse effects!

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- 6-year, 12,000-patient study, to be completed in 1982
- Assesses factors that may increase risk of cardiovascular disease
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CONTRAINDICATIONS

Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy—Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia (especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

ADVERSE REACTIONS

Hydroflumethiazide—Skin-rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation.

Reserpine—Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares.

USUAL DOSE

The usual adult dose of Salutensin is one tablet once or twice daily. If a smaller amount of thiazide diuretic is desired, Salutensin-Demi, one tablet once or twice daily can be given.

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News Notes

(continued from page 452)

as a consultant to the National Endowment for the Humanities.

Dr. Jarlath M. MacKenna, assistant professor of obstetrics and gynecology, was a guest speaker at the N.C. Chapter of the American College of Obstetrics and Gynecology Junior Fellow meeting held at Duke University.

MacKenna's topic for discussion was "Radical Management of Premature Ruptured Membranes."

He also was a guest speaker at the March of Dimes Perinatal Symposium held March 18 in Greenville. MacKenna presented "Hypertensive States of Pregnancy" during the symposium.

Dr. James G. Jones, professor and chairman of the Department of Family Medicine, received a grant of \$74,356 during March from the Public Health Service to support general practice dental residency training.

Other School of Medicine grants received in March include: Dr. Harold J. May and Dennis A. Revicki, Department of Family Medicine, "Validation of the Physician Burnout Checklist in Two Samples of Family Physicians," \$2,548 from Family Health Foundation of America; Ben Weaver, associate dean, "Arthritis Community Outreach Program," \$15,000 from N.C. Department of Human Resources.

Dr. Sam N. Pennington, professor of biochemistry, was a visiting scientist for the Federation of American Societies for Experimental Biology at Elizabeth City State University February 24-25. Pennington conducted two seminars entitled "Role of Prostaglandins in Chronic Alcoholism" and "Molecular Mechanism of Fetal Alcohol Syndrome."

University of N.C. School of Medicine And N.C. Memorial Hospital

A scholarship in the School of Medicine has been established to honor Dr. Thomas Collum Butler, and the tribute is two-fold. Not only is the scholarship named for Butler, but also it will provide annual support for a student in the M.D.-Ph.D. program, a track Butler has long advocated for physician scientists.

The establishment of the Butler Scholarship was announced by Dr. Stuart Bondurant, dean of the School of Medicine, who said the initiative for honoring Butler in this manner came from Butler's colleagues in the Department of Pharmacology.

Butler is professor of pharmacology emeritus. He chaired the Department of Pharmacology from 1950, when he was appointed to the faculty, until 1963.

Butler received A.B. and M.D. degrees from Van-

derbilt University in 1930 and 1934, respectively. He served on the faculty there and at The Johns Hopkins University before joining the faculty of the University of North Carolina at Chapel Hill in 1950. He officially retired from the UNC-CH faculty in 1980.

Butler's pioneering research in pharmacology led to, as one former student puts it, "an avalanche of studies" by other scientists.

The first Butler Scholarship will be awarded next fall to a student who has been accepted to medical school and is interested in the M.D.-Ph.D. program. The student may select any basic science department or curriculum for graduate studies.

The level of support will be comparable to the Morehead Fellowship, and the Butler Scholarship also will support medical studies.

The Arthritis Foundation recently granted investigator awards to Dr. Simon L. Newman and Dr. Philip Cohen, both members of the division of rheumatology and immunology, Department of Medicine. The grants, which total \$53,500, become effective July 1 and will be used to further arthritis research.

Newman, research assistant professor of medicine, is studying how certain cells called macrophages recognize foreign invaders, such as bacteria, viruses and tumor cells, and destroy them.

Cohen, assistant professor of medicine, is researching the cause of systemic lupus, an arthritic condition common among young women which can lead to injury of kidneys, skin, the central nervous system and other parts of the body.

Cohen's five-year senior investigator is the second awarded in two years to the division of rheumatology and immunology.

Dr. John Winfield, professor of medicine and division chief, said that only one or two senior investigator awards are given annually. "These awards recognize the researchers' excellence and potential as investigators in immunology," Winfield said. "Providing financial support over a five-year period enables both men to devote their time to research." Winfield added that Newman's two-year investigator award was a new award which was given to eight researchers across the country.

The appointment of Dr. William Droegemueller as professor and chairman of the School of Medicine's Department of Obstetrics and Gynecology has been announced by Chancellor Christopher C. Fordham III.

Droegemueller's appointment, effective March 1, is for a five-year term as department chairman.

Droegemueller, a Chicago native, had been professor and associate head of the Department of Obstetrics and Gynecology at the Arizona Health Sciences Center in Tucson since 1977. He taught at the University of Colorado Medical Center in Denver from

1965-77 and was vice chairman of the center for one year.

A specialist in gynecological surgery, Droegemueller has done research in population control and the complications involved in different methods of contraception. He recently published articles on a new vaginal contraceptive, ectopic pregnancy, surgical contraception and complications involving intra-uterine devices.

Droegemueller received his B.A. degree in 1956 and his M.D. in 1960 from the University of Colorado in Denver.

Physicians at the University of North Carolina at Chapel Hill have begun clinical trials of a drug that may be the most effective treatment yet for sickle cell disease, the hereditary and sometimes excruciating illness that is most common among black people.

The UNC-CH scientists are joining with researchers in California, New York and Mobile, Ala., to evaluate cetiedil, a compound first synthesized in France 20 years ago.

"This is something we're very excited about," said Dr. Eugene P. Orringer, associate professor of medicine and principal investigator for the project.

"We're testing the ability of cetiedil to shorten the acute painful crises of sickle cell disease once they have begun, then we will test its ability to prevent them."

Cetiedil, Orringer explained, was developed originally as a smooth muscle relaxant to improve circulation to the legs of patients with hardening of the arteries. Because of its success and its additional properties as a local anesthetic, French physicians speculated that it also might help to curb the intense bouts of pain that sickle cell victims experience periodically.

"Although no controlled studies were carried out, initial reports that came primarily from West Africa claimed that the drug was extremely effective," he said.

By May, Orringer, Dr. Lee R. Berkowitz, a fellow in hematology, and Sue Sparrow, coordinator of the UNC Sickle Cell Program, hope to recruit 25 patients who are age 19 or older. Whenever possible, the physicians will interview each individual before a crisis begins so that they can explain the study clearly.

When a crisis does occur, a patient will contact one of the physicians or go immediately to the Emergency Room at North Carolina Memorial Hospital, Orringer said. He or she will be admitted to the hospital's Clinical Research Unit and receive free all of the standard treatment for sickle cell disease including oxygen, intravenous fluids and appropriate painkillers.

In addition, the patients will be given either cetiedil or an identical volume of an inactive solution. The study is "double-blind" in that neither the patients nor the doctors will know who received the active drug until after the study has been completed.

Charles B. Watson, M.D., Fred J. Spielman, M.D., Scott Sharpiro, M.D., Edwin A. Bowe, M.D., and E. F. Klein, M.D., anesthesiology, attended the 35th post-graduate assembly of anesthesiologists in New York, "Best Educational Exhibit." Their display was on "New Anesthetic Uses for the Pediatric Fiberoptic Bronchoscope," December, 1981.

Barney Leveau, M.D., associate professor of physical therapy, participated in a meeting of the associate editors of *Physical Therapy Magazine* Jan. 27-29 in Washington, D.C. sponsored by the American Physical Therapy Association.

Carolyn S. Schroeder, Ph.D., associate professor of psychology, was a visiting professor in the clinical psychology program at Bowling Green State University, Feb. 1-5 in Ohio.

Eric Schopler, M.D., professor of psychology and director of the Division TEACCH, gave a workshop for mental health and human service professionals on developmental therapy for autistic children, sponsored by the professional education division of the

Convalescent Hospital for Children, Feb. 11 in Rochester, N.Y.

Arthur J. Prange Jr., M.D., professor of psychiatry presented Grand Rounds at the Medical College of Virginia, titled "Adventures in the Thyroid Axis: Their Relevance for Affective Disorders," on Feb. 12. Prange also conducted Grand Rounds at Beth Israel Medical Center, and the St. Luke's-Roosevelt Medical Center in New York on Feb. 16-17; his subject was "Neurotensin: A Brain Peptide with Neuroleptic Properties."

Charles R. Hackenbrock, M.D., professor and chairman of anatomy, spoke at a special workshop on lipid protein interactions at the annual meetings of the Biophysical Society Feb. 14-17 in Boston, Mass.

James N. Hayward, M.D., H. Houston Merritt Distinguished professor and chairman of neurology, spoke at the Gordon Research Conference Feb. 8-12 in Ventura, Calif., and at the Feb. 17 meeting of the N.C. Society for Neuroscience, of which he is president-elect.

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Richard Cumming, postdoctoral fellow in the neurobiology research program, assumed the position of neurobiologist in the laboratory of biological ultrastructure at the National Institute for Medical Research March 1 in Mill Hill, London.

Herman P. Lineberger, M.D., assistant professor of psychiatry and child psychiatry training director participated in a panel presentation on the management of chronic pain problems in hemophiliacs at a joint meeting of The National Hemophilia Foundation and the American Psychosomatic Society in Denver, March 24. Lineberger's paper, titled "Social Characteristics of a Hemophilia Clinic Population, A Survey and Literature Review" was published in the journal, *General Hospital Psychiatry* late last year.

Keith Burrige, Ph.D., assistant professor of anatomy, was an invited speaker to present a seminar titled "Molecular Biology of Cell Locomotion" for the Imperial Cancer Research Fund sponsored by the Royal Society of London, March 24-25.

Daniel L. Dolan, M.D., director of continuing medical education at the Mountain Area Health Education Center, has been elected president of the North Carolina Chapter of the American College of Physicians. This election recently took place at the annual meeting of the chapter held in Winston-Salem.

Herbert S. Harned Jr., M.D., is professor of pediatrics, chief, division of pediatric cardiology; his patient care includes diagnostic cardiac catheterization studies, peri-surgical care and outpatient care. The division holds 80 clinics yearly outside clinic hospital and a weekly clinic within the hospital. Thirty-six of the outside clinics are reached by airplane flights. The new programs are a development of an adolescent cardiac clinic and the outreach cardiac clinic at Moses Cone Hospital.

Stephen C. Chaney, Ph.D., assistant professor of biochemistry and nutrition, just returned from a sabbatical leave at the University of California at Davis. Working in Dr. John Hershey's laboratory, he studied the purification and use of human protein synthesis initiation factors which play a vital role in the growth of living cells. He also studied the susceptibility of these in the growth of the living cells; key enzymes to various anticancer drugs. It is hoped that these experiments may provide the basis for the design of more effective cancer treatment.

Bowman Gray School of Medicine Wake Forest University

A biochemist at the Bowman Gray School of Medicine has developed a potential weapon against cancer of the ovary.

Dr. George J. Doellgast has created hybrid cells with the ability to produce antibodies specifically against ovarian cancer.

He created the hybrids by fusing myeloma cells with cells from mouse spleens. The resulting cells are called hybridomas and are capable of producing large amounts of monoclonal antibodies.

Central to Doellgast's technique is an enzyme he spent a decade of his career studying. Placental alkaline phosphatase (PAP) occurs in the human placenta and in some cancers, notably cancer of the ovary. He has shown that PAP makes those cancers vulnerable to monoclonal antibodies.

The PAP enzyme acts as a marker on the surface of ovarian cancer cells to make the cells a target for monoclonal antibodies.

Because they can be grown in great quantities in the laboratory, monoclonal antibodies against ovarian cancer theoretically could be injected into a patient in sufficient numbers to overwhelm a tumor.

The monoclonal antibodies also promise to be a means of delivering chemotherapeutic agents and radiation to a tumor. Such a use would spare normal cells from exposure to the drugs and radiation.

Despite the promise of what his research has uncovered, Doellgast cautions that much more testing remains to be done before the techniques ever can be used in human patients.

One of the most advanced systems ever developed for uncovering the causes of dizziness is now in use at North Carolina Baptist Hospital, Bowman Gray's principal teaching hospital.

According to Dr. Robert I. Kohut, professor and head of the Section on Otolaryngology, only the Air Force has a diagnostic system for dizziness as complete as the vestibular laboratory at Baptist Hospital.

Dizziness is thought to be second only to pain in the frequency of patient complaints. It can be a signal of a life threatening problem.

The vestibulo-ocular system provides more information about the balance system than was previously available because it permits study of the effects of rotation, posture change and stimuli which causes normal and rapid eye movement. Eye movement can be traced in the dark using infrared cameras.

Computerization within the new system permits computations which previously were prohibitively complicated.

The most comprehensive and current information about a rapidly evolving field of medicine is contained in a publication released by the Bowman Gray School of Medicine.

The publication, "Proceedings of an International Symposium on Nuclear Magnetic Resonance Imaging," was published by the school's Department of Radiology. The Bowman Gray editors are Dr. Richard L. Witkofski, professor of radiology, and Dr. Nolan Karstaedt, assistant professor of radiology. The third editor, Dr. C. Leon Partain, is associate professor of radiology at the Vanderbilt University School of Medicine.

Bowman Gray sponsored the three-day symposium on nuclear magnetic resonance (NMR) imaging along with Vanderbilt and the National Cancer Institute.

NMR imaging involves the use of magnetism and radio waves to obtain information about what is occurring within the body. It does not involve ionizing radiation. Computers used in NMR imaging translate a signal coming from the body into images of the body in cross section. Not only do the signals carry information about anatomy, but also they carry considerable information about the body's chemistry.

The new book from Bowman Gray provides a single source for learning about the theory of NMR imaging and for learning about how NMR imaging is being applied in such places as New York State, England and Scotland.

The American Cancer Society has awarded a three-year, \$162,000 grant to Bowman Gray for research aimed at a better understanding of the body's defense mechanisms against disease.

The research is headed by Dr. J. Wallace Parce, assistant professor of biochemistry.

Working with a particular strain of mice and with a virus known as VSV, Parce will be able to obtain the material needed to study the manner in which the body recognizes a foreign material such as a virus.

Parce anticipates that the work will provide a clearer understanding of how antigens and antibodies interact to allow the body to recognize something as being foreign.

The body's destructive mechanism which is part of Parce's research is the T-lymphocyte, a type of white blood cell.

While the work represents very basic research, the understanding gained from the work eventually may apply to such problems as cancer.

Bowman Gray has appointed three assistant professors and two instructors to its fulltime faculty.

The new assistant professors are Drs. John M. Lewis and Roger L. Royster of anesthesia, and Dr. Jan C. Updike in family medicine.

Those receiving appointments as instructor are Dr.

J. Bruce McLain, dentistry, and Dr. Steven R. Plunkett, radiology (radiation therapy).

Appointed to the clinical faculty are Dr. John R. Jacoway, clinical associate professor of pathology (oral pathology); Dr. Alvin S. Goodman, clinical assistant professor of dentistry (endodontics); Dr. Salvatore M. Pulverenti, clinical assistant professor of anesthesia; Drs. George J. Ellis Jr., James E. Ferguson II and Richard L. James, clinical instructors in obstetrics and gynecology; Dr. Kerry J. Gilliland, clinical instructor in medicine (cardiology); Dr. Christopher W. Groner, clinical instructor in family and community medicine; Dr. Clarence E. Lloyd, clinical instructor in radiology; and Dr. Stephen A. Yokeley, clinical instructor in dentistry.

Other appointments went to Dr. Deborah L. Best, associate in family and community medicine, and Robert C. Vaughn Jr., lecturer in medical jurisprudence.

Leon L. Rice Jr., a Winston-Salem attorney, has been re-elected chairman of the Medical Center Board of the Bowman Gray School of Medicine and North Carolina Baptist Hospital.

E. J. Prevatte of Southport was re-elected vice chairman, and Dr. Thomas D. Long of Roxboro was elected treasurer. Miss Katherine Davis, assistant to the medical center director, was re-elected secretary.

The board consists of six trustees of Wake Forest University, six trustees from Baptist Hospital and a member of the medical center's professional staff.

Newly appointed members of the board are Mrs. J. Frank Gilreath Jr. of Charlotte, Weston P. Hatfield of Winston-Salem, J. Robert Philpott of Lexington and Carlos Young of Shelby.

Charles M. Jones III, a third-year medical student at Bowman Gray, has been awarded the John R. McCain Student Fellowship of the South Atlantic Association of Obstetricians and Gynecologists. He received a \$600 student research grant and was selected to speak on his study, "The Effect of Labor on Maternal and Fetal Circulating Catecholamines," during the association's 44th annual meeting.

L. Ann Daniels, instructor in health education and director of allied/public health education for the Northwest AHEC, has been selected for a two-year term as a member-at-large of the executive board of the North Carolina Society for Public Health Education.

Patricia A. Gibson, instructor in pediatric neurology (social work), has been appointed to the Advisory committee of the National Information and Resource Center on Epilepsy.

(continued on page 461)

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The Physician's Sleep Glossary

Some common sleep laboratory terms

poly·som·no·graph. An instrument which simultaneously records by electrodes physiological variables during sleep—for example, brain activity (EEG), eye movements (EOG), muscle tone (EMG) and other electrophysiological variables. These readings indicate precisely when patients fall asleep, how many wake periods they experience, the quality of sleep and the duration of sleep.

sleep la·ten·cy. The period of time measured from "lights out," or bedtime, to the commencement or onset of sleep.

wake time af·ter sleep on·set. Intervals of time spent awake between onset of sleep and the end of the sleep period. The polysomnograph registers the length and frequency of the intervals.

to·tal sleep time. The amount of time actually spent in sleeping. This is estimated by subtracting wake times from the period encompassed by the onset and the termination of sleep.¹

REM/NREM. 1. REM, or rapid eye movement, sleep is "active"—characterized by increased metabolic rates, elevated temperature and arousal-type EEG patterns. 2. NREM, or non-rapid eye movement, sleep represents "quiet" sleep stages. There are four distinct stages of NREM sleep.²

re·bound in·som·nia. A statistically significant worsening of sleep compared to baseline on the nights immediately following discontinuation of sleep medication.³

Efficacy objectively demonstrated in the sleep laboratory—the most valid environment for measuring hypnotic efficacy.

In numerous sleep laboratory investigations patients fell asleep sooner, slept longer and woke up less during the night³⁻¹² with

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Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.


Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, light-headedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. **Adults:** 30 mg usual dosage; 15 mg may suffice in some patients. **Elderly or debilitated patients:** 15 mg recommended initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

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News Notes

(continued from page 458)

Dr. C. Douglas Maynard, professor and chairman of the Department of Radiology, has been appointed to the editorial board of the international journal, *Magnetic Resonance Imaging*.

Dr. Lawrence A. McHenry, professor of neurology, has been appointed historian and archivist for the American Neurological Association. He has transferred the archives of the ANA to Bowman Gray for permanent storage and maintenance. He will work on the history of the ANA in conjunction with his work on the development of American neurology in the late 19th century.

Dr. Timothy E. Poe, assistant professor of family and community medicine (clinical pharmacy), has been elected to the board of directors of the North Carolina Society of Hospital Pharmacists.

Dr. Richard W. St. Clair, professor of pathology, has been selected to serve on the Editorial Board of the journal *Atherosclerosis*.

Duke University Medical Center

Dr. James B. Wyngaarden, chairman of the medical center's Department of Medicine since 1967, was nominated by President Reagan as director of the National Institutes of Health.

"Dr. Wyngaarden is uniquely qualified to serve the nation as director of the National Institutes of Health," said Dr. William G. Anlyan, vice president for health affairs. "He is one of the nation's most distinguished clinical investigators and he has been one of the pillars of biomedical research at the national level. He will leave a major gap at Duke University."

A graduate of the University of Michigan Medical School, Wyngaarden served his internship and residency at Massachusetts General Hospital.

Between 1953 and 1956, he worked at NIH; first as an investigator in the Laboratory of Chemical Pharmacology and then as a clinical investigator in the National Institute of Arthritis and Metabolic Diseases. He joined Duke in 1957 as an associate professor of medicine.

Dr. George Ellis, a medical center associate professor of endocrinology, told a capacity crowd at the March 2 "Health Night Out" lecture that "diabetes can be dealt with before you get it."

"What some of you may not have realized is that what we consider the 'normal American lifestyle' can

make you sick," said Ellis. "We ride in cars instead of walking, eat Big Macs and cokes, have machines and paid athletes to get our exercise for us, and carry stored energy to the tune of 3,500 calories for every pound of fat."

Ellis told the crowd that excessive weight is the most common predisposing factor to Type II diabetes, the non-insulin dependent form which accounts for 80% to 90% of all diabetes.

He discussed insulin dosages and the different tools available to measure the amount of insulin in the blood and urine.

"From a physician's standpoint, diabetes is a difficult disease because it's really up to the patient to take over the treatment and adjust medication on his own with coaching by the physician to get good control," he said. "You either manage diabetes, or it manages you."

Dr. H. Keith H. Brodie, James B. Duke professor of psychiatry and chairman of that department, will become Duke University's new chancellor July 1.

Brodie, who is also a member of Duke's law school faculty, succeeds A. Kenneth Pye, who will return to the law school faculty and direct international studies at Duke.

"We are very fortunate to have a man of Dr. Brodie's experience and enthusiasm to assume the rigorous responsibilities of Duke's chancellor," said Duke's President Terry Sanford.

Brodie, 42, has been at Duke since 1974. Before coming to Duke, he was in the Department of Psychiatry at Stanford University and program director of the General Clinical Research Center in the Stanford School of Medicine.

He is a 1961 graduate of Princeton University and received his medical degree from Columbia University College of Physicians and Surgeons in 1965. He received additional training at Ochsner Foundation Hospital, New Orleans; Columbia-Presbyterian medical center, New York City; and the National Institute of Mental Health.

Medical center immunologist, Dr. D. Bernard Amos, an innovator in the effort to understand and define a system of genes called the major histocompatibility complex, crucial to the success of organ and tissue transplants, has won the 3M Life Science Award.

The \$10,000 award, sponsored by 3M and administered by the Federation of American Societies for Experimental Biology, was presented to Amos in April at the General Session of the Federation's annual meeting in New Orleans.

Amos is James B. Duke Professor of Immunology and Experimental Surgery and chief of the division of immunology at Duke. He came to Duke in 1962 as a

professor in the division of immunology, and initiated a study of human skin grafting. The results of that study provided the first evidence of a major histocompatibility complex in humans.

He has received numerous awards and honors.

At the same meeting, a medical center professor of pharmacology, Dr. Theodore A. Slotkin, was named the 1982 recipient of the John J. Abel Award in Pharmacology. That award is given annually to recognize outstanding research in the field by a young scientist.

The award, which consists of \$2,500 and a bronze medal, is supported by the Eli Lilly Company. The young pharmacologist was recognized for his contributions in the research of the developing nervous system.

Slotkin has received numerous honors and awards for his work. In 1975, he was named the Outstanding Young Investigator of the North Carolina Heart Association. He was one of the first recipients of the Pharmaceutical Manufacturers Association's Foundation Faculty Development Awards in Basic Pharmacology. He also holds a current Research Scientist Development Award from the National Institute on Drug Abuse.

Slotkin received his doctorate degree in pharmacology and toxicology from the University of Rochester in New York in 1970. He worked as a postdoctoral fellow in biochemistry at Duke in 1970, and was appointed an assistant professor of physiology and pharmacology at Duke in 1971. In 1979, he was appointed a full professor of pharmacology.

A medical center researcher has received a \$125,000 grant from the Multiple Sclerosis (MS) Society to study the cells that may be the major link to MS.

"The cause of MS is unknown," said Dr. Andrew K. Hodson, a pediatric neurologist whose main research interest is brain development. "Many theories so far are based on animal models, but MS is a disease unique to humans. Only by studying human brain material will we understand MS."

Hodson said researchers know that MS patients show a loss of myelin. Areas of the brain damaged by MS also show a loss of oligodendrocytes. Theories about the cause of MS center around myelin breakdown, he said, and the function of oligodendrocytes may give a clue to that breakdown.

"I'm specifically studying the role of oligodendrocytes," Hodson said. "I want to find the answer to the question, 'Are you born with abnormality in the oligodendrocyte plasma membrane that leads to MS?' Or does a virus induce the change?"

Dr. William G. Anlyan, vice president for health affairs, was chosen by the Durham Chamber of Commerce as one of two recipients of the Civic Honor Award. The presentation was made at the chamber's 70th annual meeting.

Before an audience of about 900 in Cameron Indoor Stadium, Anlyan and George R. Herbert, president of the Research Triangle Institute, were presented the award by former Durham Mayor James Hawkins.

The award is given annually by the chamber to recognize persons who have made extraordinary contributions to the Durham Community. Anlyan was cited for his leadership at the medical center since 1964 through times of major growth and development. He was also commended for his work in the Durham Community, including his help in implementing the City of Medicine campaign.

A medical center researcher is examining data collected from 30 organ procurement centers throughout the southeast so he can learn what affects kidney transplant success rates when living relatives are the donors.

Dr. Fred Sanfilippo, director of the medical center's Transplantation Laboratory, hopes the study will provide the key to understanding what causes renal transplant failure in these patients. He especially wants to know why blood transfusions from the kidney donor before surgery improve the acceptance of transplants from living related donors.

"A group of researchers recently discovered that these transfusions increase the survival rate," Sanfilippo said. "It's now becoming accepted procedure but we don't know why it works, and exactly what the risks are."

Data is collected prospectively on all patients accepted for living related transplants in the Southeastern Organ Procurement Foundation (SEOPF). The organization, which was the first of its kind in scope, consists of 39 transplant centers in the southeast.

The immuno-pathologist said he hopes data from the study will answer questions about recurrent disease among kidney failure patients.

"At least 40% of persons in renal failure have had some form of glomerulonephritis," he said. "Kidney transplants are still a relatively new procedure," he said. "And we need to systematically study those who have transplants and those who donate organs to find out what affects acceptance."

The Burroughs Wellcome Fund has provided major support for establishing the Wellcome Clinical Professorship in honor of one of the medical center's most eminent cancer specialists, Dr. R. Wayne Rundles. The clinical professorship will support professors involved in cancer research.

Rundles, who is a professor of medicine and former head of the hematology division, has been associated with Burroughs Wellcome Company since 1955. He served as a consultant and participated in the testing and development of several major drugs which the company now markets. He was recently reappointed as a consultant, following his retirement from Duke.

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Rundles serves as an advisor to the Burroughs Wellcome Fund.

Dr. Stephen H. Gehlbach, associate professor in the department of Community and Occupational Medicine, is author of a book, *Interpreting the Medical Literature: A Clinician's Guide*, published in February.

Dr. Jeffrey J. Collings, associate professor of surgery and assistant medical research professor of microbiology and immunology, has been appointed co-chairman of the program committee for the Comprehensive Cancer Center seminar series.

Dr. John L. Walker, an assistant professor of psychiatry at Duke and a staff psychiatrist at the Durham Veterans Administration Medical Center, has written a book, *Everybody's Guide to Emotional Well-Being*, published in April.

The 220-page text "was written to help people learn how to help themselves get help," Walker said. The psychiatrist devoted a substantial portion of the book to explaining different types of psychotherapy and how to choose a therapist.

James K. Roche, assistant professor of medicine, received a \$69,863 research award from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study the immunological mechanisms for gut inflammation.

David G. Shand, professor and chief of the division of clinical pharmacology, received a research grant of \$76,926 from the National Heart, Lung and Blood Institute. Shand is studying "Plasma Binding and Drug Disposition in Health and Disease."

Jenny P. Ting in the Department of Microbiology received a national research service award of \$19,040

from the National Institute of Neurological and Communicative Disorders and Stroke to study neuroimmunology.

Don R. Bahner Jr. in the Pediatric Pulmonary Laboratory received a \$1,500 student traineeship award from the Cystic Fibrosis Foundation. The title of Bahner's project is "Sensitivity of *Pseudomonas Aeruginosa* to CF Serum and Lavage Effluent."

Fearghus T. O'Foghludha, professor of radiology, received a \$52,281 research grant from the National Cancer Institute to study the integral and mean dose in CT examinations.

L. Michael Cobo, assistant professor of ophthalmology, received a research grant of \$14,725 from the National Eye Institute. Cobo's research project is "Morphology of Post Surgical Lens Capsule Opacification."

Thomas C. Vanaman, director of the Basic Research Program and professor of microbiology, received a \$69,399 research grant from the National Cancer Institute to study the biochemistry of cellular transformation.

Robert A. Rosati, associate professor of cardiology and director of clinical epidemiology, received a specialized research center grant of \$929,905 from the National Heart, Lung and Blood Institute for the ischemic heart disease specialized center of research.

Gerald S. Lazarus, J. Lamar Callaway Professor and chairman of the division of dermatology, received a \$116,690 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study the role of proteinases in cutaneous catabolism.

Vincent W. Dennis, associate professor and chief of the division of nephrology, received an \$87,255 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. The title of his project is "Transport and Metabolism in Proximal Renal Tubules."

Judith L. Swain, assistant professor of cardiology and physiology, was given a new investigator research award of \$34,758 by the National Heart, Lung and Blood Institute. Swain is studying the role of purine metabolism in myocardial function.

MICHEL de MONTAIGNE [1533-1592]

Whenever a new discovery is reported to the scientific world, they say first, "It is probably not true." Thereafter, when the truth of the new proposition has been demonstrated beyond question, they say, "Yes, it may be true, but it is not important." Finally, when sufficient time has elapsed to fully evidence its importance, they say, "Yes, surely it is important, but it is no longer new."

In Memoriam

RICHARD STERLING KELLY, JR., M.D.

It is with profound sorrow that we must report the untimely death, on 2 January 1982, of our colleague, Richard Sterling Kelly, Jr., M.D.

Dr. Kelly was born in Erwin, N.C., the eldest of three children of Roberta Davis Kelly and Richard Sterling Kelly. He was educated at Davidson College and Jefferson Medical College and was a Diplomate of The American Board of Pediatrics and a Fellow of the American Academy of Pediatrics. His distinguished career included service as a medical officer in the United States Naval Reserve during World War II and terms of office as President of the Cumberland County Medical Society, Chief of Staff of the Cape Fear Valley Hospital, Chairman of the Section on Pediatrics for the North Carolina Medical Society, and President of the North Carolina Pediatric Society. Survivors include his widow, Mrs. Rosalie Huske Kelly, and his

children, Richard Sterling Kelly, III, of Greensboro, Mrs. Robin Kelly Legg of Raleigh, William Huske Kelly, Patricia Andrews Kelly, and John Worthington Kelly of the home.

Dr. Kelly was engaged in the private practice of pediatrics in Fayetteville for thirty years during which time he cared for two generations of well served patients. His unfailing good humor endeared him to his youthful patients, and his superb skills in the practice of pediatrics won for him the admiration and respect of his colleagues. He was a man of many interests, a good citizen, a grand companion, a loyal friend, and, most especially, a loving husband and father. He is sadly missed by his family, friends, and community who can be consoled in their loss by the deep satisfaction that derives from remembering his honored and useful life.

CUMBERLAND COUNTY
MEDICAL SOCIETY

There are some foods which are extremely detrimental and it is proper for man never to eat them, such as large salted old fish, old salted cheese, truffles, mushrooms, old salted meat, wine must, and a cooked dish which has been kept until it acquired a foul odor. Likewise, any food whose odor is bad or excessively bitter is like a fatal poison unto the body. There are other foods which are also detrimental but are not as injurious as the aforementioned ones. Therefore, of these, one should eat only a little and only after [intervals of] many days. . . . Examples [of this type of food] are large fish, cheese, and milk that is kept for 24 hours after milking. The meat of large oxen and large he-goats, beans, lentils, peas, barley bread, unleavened bread, cabbage, leeks, onions, garlic, mustard, and radishes — all of these are detrimental foods.

Ibid., No. 9

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Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal, adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults:* Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d., adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

How Supplied: For oral administration, Valium scored tablets—2 mg, white, 5 mg, yellow, 10 mg, blue—bottles of 100* and 500; * Prescription Paks of 50, available in trays of 10; * Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, † and in boxes containing 10 strips of 10.

*Supplied by Roche Products Inc., Manati, Puerto Rico 00701

†Supplied by Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey 07110

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PLAN AHEAD

COMMITTEE CONCLAVE
September 29-October 3, 1982
Mid Pines Club
Southern Pines, N.C.

MID-WINTER CONFERENCE
February 3-4, 1983
Marriott Hotel
Raleigh, N.C.

ANNUAL MEETING
May 5-8, 1983
Pinehurst Hotel
Pinehurst, N.C.



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North Carolina MEDICAL JOURNAL

July 1982, Vol. 43, No. 7

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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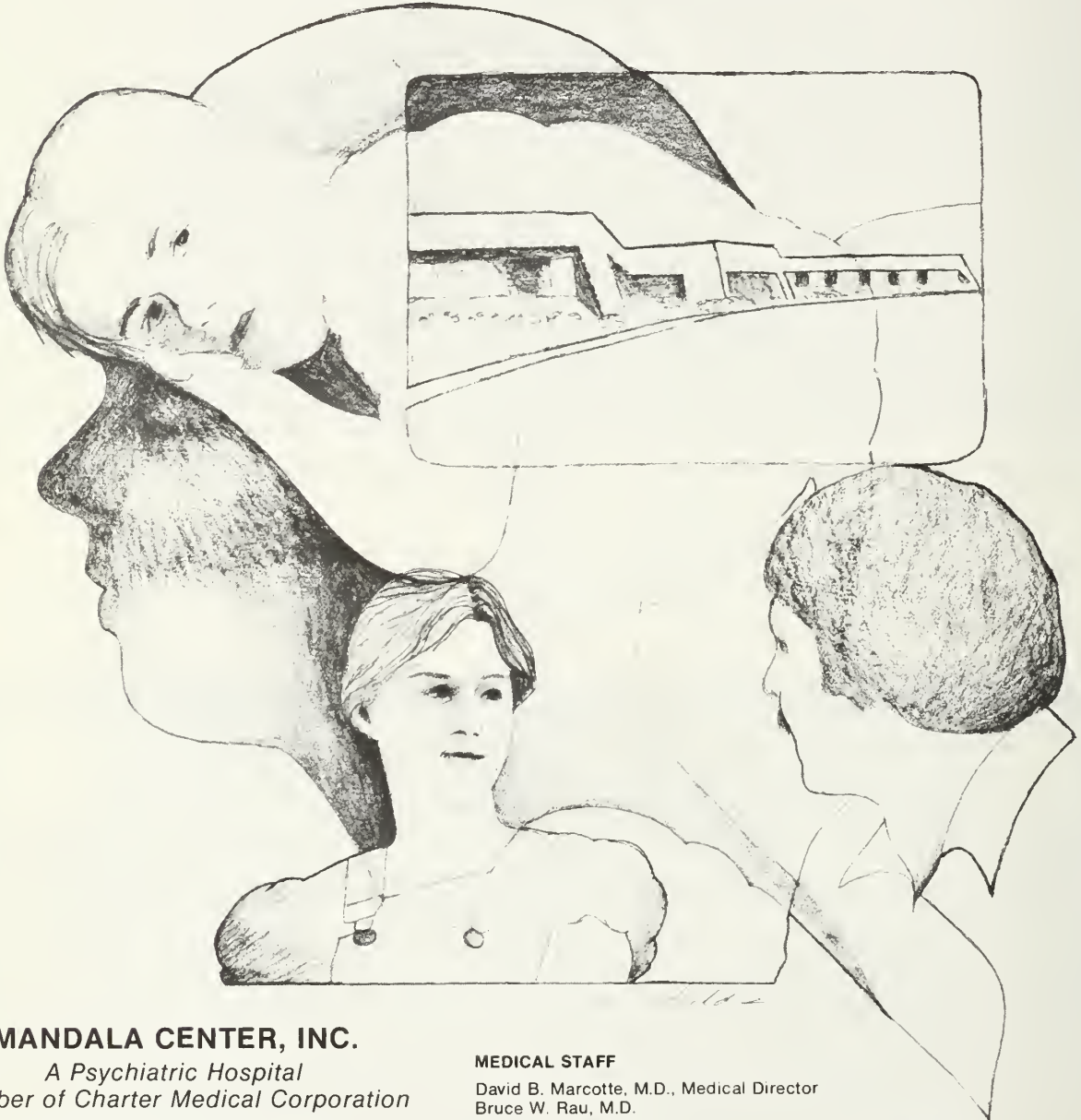
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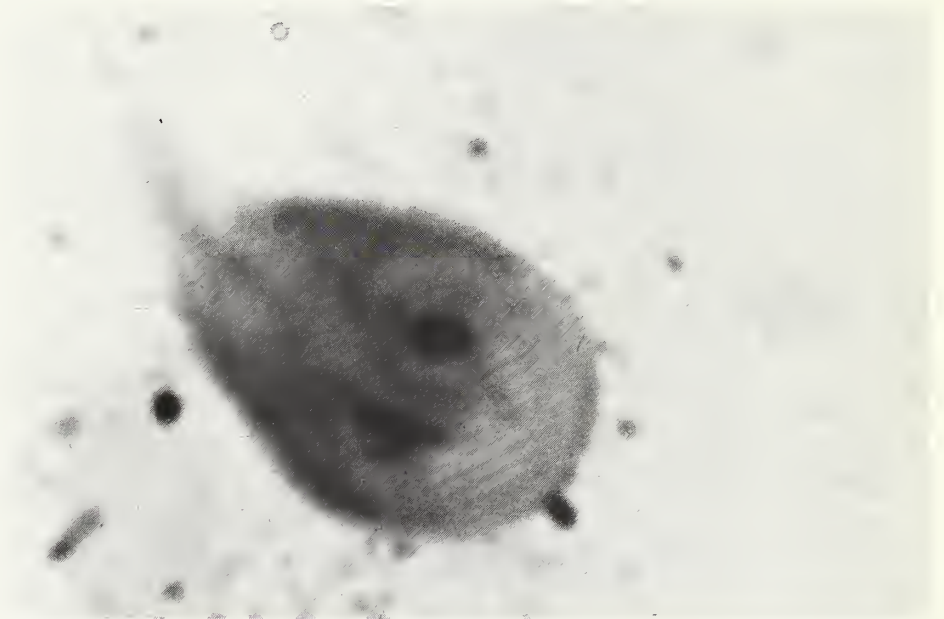
Those parasites that live primarily in the duodenum or bile ducts often are more readily seen in the duodenal contents than in the stool. These include *Giardia lamblia* (motile trophozoites), *Strongyloides stercoralis* (larvae and/or eggs in advanced stages of development), *Clonorchis sinensis* (eggs), *Fasciola hepatica* (eggs), *Trichostrongylus orientalis* (eggs), and *Isospora* (coccidia).

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Giardia lamblia

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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 2

JULY 1982

What started out to be a very slow month has become increasingly busy. All the Commissioners and most of the Committee Chairmen have been appointed. The nominations for committee representatives will be out shortly and in some cases have already been assigned. I think everyone should have the once in a lifetime experience of trying to reach two or three hundred very busy doctors on the phone to discuss committee memberships and Medical Society business. I either can't get anyone on the phone at a given time or three calls at once. It's a real educational experience.

The AMA Meeting in June was held in Chicago and William Y. Rial, M.D., of Swarthmore, PA., was installed as the AMA's 137th President. Dr. Jim Davis did an expert job at conducting much of the House of Delegates business during the three meetings and our congratulations go to Jim for his re-election as Vice-Speaker of the House. We wish him continued success.

The House of Delegates endorsed a Board of Trustees plan to develop a national health policy that will be designed to function through the foreseeable future and give the health sector the opportunity to abandon the "year-to-year, piecemeal development of policy that responds only to the pressures of the moment". The program, in which a variety of other organizations will be asked to join, was first reported at the 1982 National Leadership Conference. In other developments, a proposal to revive the general internship as the transition year between medical school and residency was adopted by the House as part of the move to assure that every physician will have received broad-based clinical training before he or she enters a specialty. The AMA also recommends a \$30 increase in regular membership dues beginning in 1983.

Among other actions, the AMA approved the American Society of Cytology for specialty society representation in the House of Delegates. Dr. William W. Johnson of the Duke University Medical Center was seated as the official delegate for the Society. We welcome Dr. Johnson to fellowship with the other seven North Carolinians serving in the House, five State Society delegates and two specialty society delegates from our state.

Dr. John Glasson was unsuccessful in his attempt for election to a position on the Board of Trustees of the AMA. John's campaign was hard fought and well executed but the competition was very stiff. John has been a powerful force as Chairman of the AMA Council on Medical Service, and we wish him success in the future.

I am very pleased to announce a major achievement for our North Carolina Medical Society Auxiliary at the recent Annual Meeting of the AMA Auxiliary. The Tar Heel Tandem won first place for the State Magazine with a budget of \$5,001 or more, and it also won the TOP award for the most outstanding publication in the country. Also, one of our more outstanding members was elected to the Nominating Committee by the AMA Auxiliary's House of Delegates. Mrs. Anne Hubbard, Immediate Past-President of the Medical Auxiliary will fill this post and make us all proud as she continues her vigorous support of our Society.

The 1981 Session of the N. C. General Assembly adjourned on Wednesday, June 23. Highlight of the special session for medicine was consideration in the House of Representatives of S.B.-411, "An Act to Redefine the Practice of Chiropractic". I am pleased to report that the Committee on Legislation, ably chaired by Don C. Chaplin, M.D., was successful in having this legislation referred to a subcommittee of the House Health Committee where

it died. Several members of the committee played key roles in keeping the Chiropractic Bill from being enacted this year. Read the Legislative Summary which is included with this Newsletter for a complete summary of this legislative action.

Other legislative action included a new fee schedule for physicians in the Medicaid Program, and a new Pharmacy Practice Act. Details of this legislation is contained in the 1982 Legislative Summary enclosed with this mailing. Barbara Matula, Director of the Division of Medical Services made a most dynamic presentation to increase fees paid under the Medicaid Program to physicians. The Appropriations Committee ultimately adopted those proposals.

The new North Carolina State Employees' Health Plan, to be implemented on October 1, 1982, was adopted by the N. C. General Assembly only hours before its adjournment. Benefits criteria were previously developed by the William M. Mercer Co., at the direction of a Joint Committee of the Senate and House. On June 24, 1982, North Carolina Budget Officer John A. Williams, Jr., awarded the Administrative Services only contract to EDS Federal Corp. Letters concerning the Second Surgical Opinion Program, an integral part of the Health Plan, will be mailed to all North Carolina surgeons by July 15. You must return the postage-paid business reply card promptly if you are to participate in this Health Plan which will service approximately one-tenth of the State's population.

A weekend retreat, August 20-22, will be held by the Society's Committee on Physicians' Health & Effectiveness at Appalachian State University's Center for Continuing Education, Boone. Prominent speakers will present their programs for treatment of alcoholism, drug abuse, and emotional illness. Additional information about the program can be obtained by contacting Theodore R. Clark, M.D., Pinehurst or from the Society headquarters.

For my recognition this month of a Living Past-President, I've turned to the 1970-71 presidential year of Dr. Louis deS. Shaffner, whose year included the headquarters office move into the Society Building in February 1971. In his President's Farewell Address May 18 1981, entitled "Speaking for Us," Dr. Shaffner focused on Speaking to the Public, Setting Policy, Service to Members, and Planning for Change. His several comments about "Change" sound very apropos today: "'Change' is a popular word these days. You have heard it often, even from me, and it has implied a vague but irresistible force that we all must reckon with more so now than ever before. 'Planning' is a word that brings up visions of vague, inefficient activity by groups with divergent interests drawn together by the lure of government money or the mandate of law. Neither word is appealing to us in these contexts. But consider them in a different way.

Change which is forced upon us by someone else's planning, we call 'interference,' but change which we initiate from our own planning we call 'progress'. To changes from without, we have been resistant; to changes from within, we have been enthusiastic. My plea last year was, and it still is, that we insist on participating actively in planning for the changes evolving in our medical care system. In that way, we may be less resistant to, if not enthusiastic about the changes we help to make."

In conclusion, Dr. Shaffner stated, "As a member, when speaking about our Society, or to our Society, don't knock it or abandon it because of its faults. Rather speak to it constructively, speak about it optimistically, help it to continue to speak with a united voice to the public, help it with your time and effort to speak helpfully to us. For, after all, in speaking to this Society, we as individual members are also speaking for us."

Sincerely yours,

Marshall S. Redding M.D.
Marshall S. Redding, M.D.
President

Campaign '82: The NC Primary Elections

The following candidates have received the nomination of their respective parties for the general election to be held Tuesday, November 2, 1982.

Two physicians will be on the ballot in the fall: William T. Grimsley (D - House 29th District) and Thomas D. Ghent (R - Senate 22nd District).

An asterisk indicates MEDPAC endorsement for the primary election (The October BULLETIN will list endorsements for the fall campaign.), RO indicates a possible runoff to be held July 27, and I indicates incumbent.

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1st District - Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Lenoir, Martin, Northampton, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, and Washington

*Walter B. Jones (I)

2nd District - Caswell, Durham, Edgecombe, Granville, Halifax, Johnston (part), Nash, Person, Vance, Warren, and Wilson

H. M. "Mickey" Michaux
(RO)

*I. T. "Tim" Valentine

3rd District - Bladen, Duplin, Harnett, Johnston (part), Jones, Lee, Moore (part), Onslow, Pender, Sampson, and Wayne

Charles O. Whitley (I)

4th District - Chatham, Franklin, Orange, Randolph, and Wake

Ike F. Andrews (I)

5th District - Alexander, Alleghany, Ashe, Forsyth, Rockingham, Stokes, Surry, and Wilkes

*Stephen L. Neal (I)

6th District - Alamance, Davidson, and Guilford

Eugene Johnston (I)

7th District - Brunswick, Columbus, Cumberland, New Hanover, and Robeson

*Charles G. Rose, III (I)

8th District - Anson, Cabarrus, Davie, Hoke, Montgomery, Moore (part), Richmond, Rowan, Scotland, Stanly, Union, and Yadkin (part)

*William G. Hefner (I)

9th District - Iredell, Lincoln, Mecklenburg, and Yadkin (part)

Preston Cornelius

10th District - Avery (part), Burke, Caldwell, Catawba, Cleveland, Gaston, and Watauga

11th District - Avery (part), Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, McDowell, Macon, Madison, Mitchell, Polk, Rutherford, Swain, Transylvania, and Yancey

*James M. Clarke

REPUBLICANS

James McIntyre

F. Douglas Biddy
(RO)

John W. "Jack" Marin

"Red" McDaniel

William W. Cobey

Anne B. Bagnal

Robin Britt

Ed Johnson

Harris D. Blake

Jim Martin (I)

James Broyhill (I)

William F. Hendon (I)

STATE SENATE

1st District - 1 seat - Beaufort (part), Camden, Currituck, Dare, Hyde, Pasquotank, Perquimans, Tyrrell, and Washington (part)

*Melvin R. Daniels (I)

2nd District - 1 seat - Bertie, Chowan, Edgecombe (part), Gates, Halifax (part), Hertford, Martin (part), Northampton, and Washington (part)

J. J. "Monk" Harrington (I)

3rd District - 1 seat - Carteret, Craven, and Pamlico

Joseph E. Thomas (I)

4th District - 1 seat - Onslow

*A. D. Guy (I)

Margo Tuma

5th District - 1 seat - Duplin, Jones, Lenoir, and Pender (part)

Harold W. Hardison (I)

6th District - 1 seat - Edgecombe (part), Halifax (part), and Warren

Julian R. Allsbrook (I)

John J. Hawkins

7th District - 1 seat - New Hanover and Pender (part)

William K. Hobbs, Jr.

J. A. Wright (I)

8th District - 1 seat - Greene and Wayne

Henson P. Barnes (I)

9th District - 1 seat - Beaufort (part), Martin (part), and Pitt

*Vernon E. White (I)

Sallie C. Keel

10th District - 1 seat - Nash (part) and Wilson

Dallas L. Alford, Jr. (I)

11th District - 1 seat - Franklin, Nash (part), Vance and Wake (part)

*James D. Speed (I)

12th District - 2 seats - Cumberland (part)

*Anthony E. Rand

John Keefe

*Lura Tally

13th District - 2 seats - Durham, Granville, Orange (part), and Person

*Kenneth C. Royall, Jr. (I)

*William G. Hancock, Jr. (I)

14th District - 3 seats - Harnett, Lee, and Wake (part)

*Joseph E. Johnson (I)

Robert A. Hassell

*Wilma Woodard

C. S. McGee

Casper Holroyd, Jr.

Richard C. Titus

(RO)

William W. Staton

15th District - 1 seat - Johnston and Sampson

Robert D. Warren (I)

John D. Johnson

16th District - 2 seats - Chatham, Moore, Orange (part), and Randolph

Wanda Hunt

P. H. Craig

Russell Walker (I)

Alan V. Pugh

17th District - 2 seats - Anson, Montgomery, Richmond, Scotland, Stanly, and Union

Robert B. Jordan, III (I)

Frank Jordan

Aaron W. Plyler (I)

18th District - 1 seat - Bladen, Brunswick, Columbus, and Cumberland (part)

R. C. Soles, Jr. (I)

J. Frank Merritt

19th District - 1 seat - Forsyth (part) and Guilford (part)

Elton Edward

Walter C. Cockerham (I)

20th District - 2 seats - Forsyth (part)

*Richard W. Barnes

John J. Cavanagh, Jr. (I)

Marvin Ward (I)

Odell C. Reid

21st District - 1 seat - Alamance and Caswell

Wiley P. Wooten

Cary Allred (I)

22nd District - 4 seats - Cabarrus and Mecklenburg

Cecil R. Jenkins, Jr. (I)

L. E. Harris

*Craig Lawing (I)

*Thomas D. Ghent, M.D.

James K. Polk

Kenneth R. Harris

*Benjamin T. Tison

23rd District - 2 seats - Davidson, Davie, and Rowan

Jack Childers

Gilbert Lee Boger (I)

Robert M. Davis

Paul S. Smith (I)

24th District - 2 seats - Alleghany, Ashe, Rockingham, Stokes, Surry, and Watauga

Conrad R. Duncan, Jr. (I)

Ernest E. Inman

George W. Marion, Jr. (I)

William E. Wilson

25th District - 3 seats - Cleveland, Gaston, Lincoln, and Rutherford

*Ollie Harris (I)

Walter H. Windley, III

*Helen Rhyne Marvin (I)

*Marshall A. Rauch (I)

26th District - 2 seats - Alexander, Catawba, Iredell, and Yadkin

Phil L. Segrave

T. Cass Ballenger (I)

William W. Redman, Jr. (I)

27th District - 2 seats - Avery, Burke, Caldwell, Mitchell, and Wilkes

James H. Edwards

Donald R. Kincaid (I)

J. Wade Walsh

Harold A. Baker (I)

28th District - 2 seats - Buncombe, McDowell, Madison, and Yancey

Robert S. Swain (I)

Thomas L. Jones

Dennis Winner

29th District - 2 seats - Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Polk, Swain, and Transylvania

Joe H. Palmer (I)

Robert D. Carpenter

R. P. Thomas (I)

Walt Sheppard, Jr.

30th District - 1 seat - Hoke and Robeson

David R. Parnell

31st District - 1 seat - Guilford (part)

William N. Martin

Nancy J. R. Wells

32nd District - 1 seat - Guilford (part)

Rachel G. Gray (I)

Wendell H. Sawyer

STATE HOUSE

1st District - 2 seats - Camden, Chowan, Currituck, Dare, Gates (part), Pasquotank, Perquimans, Tyrrell, and Washington (part)

Charles D. Evans (I)

Vernon G. James (I)

2nd District - 1 seat - Beaufort, Hyde, and Washington (part)

*Howard B. Chapin (I)
(RO)

John A. Wilkinson

Richard W. Tripp

3rd District - 3 seats - Craven, Lenoir, and Pamlico

Gerald L. Anderson (I)

John W. Gooding

*Chris S. Barker, Jr. (I)

*Daniel T. Lilley (I)

4th District - 3 seats - Carteret and Onslow

*Bruce Ethridge (I)

* J. Paul Tyndall

G. Malcolm Fulcher, Jr. (I)
(RO)

J. F. Mohn, Sr.

5th District - 1 seat - Bertie (part), Gates (part), Hertford (part), and Northampton

C. Melvin Creecy (I)

Russell H. Johnson, Jr.

6th District - 1 seat - Bertie (part), Hertford (part), Martin (part), and Pitt (part)

*John B. Gillam, III (I)

7th District - 1 seat - Halifax (part), Martin (part), and Warren (part)

Frank W. Ballance, Jr.

8th District - 4 seats - Edgecombe, Nash, and Wilson

*Allen C. Barbee (I)

Jeanne Fenner (I)

Tom Matthews

J. L. Mavretic (I)

9th District - 2 seats - Greene and Pitt (part)

Sam D. Bundy (I)

Edward N. Warren (I)

10th District - 1 seat - Duplin and Jones

Wendell H. Murphy

11th District - 2 seats - Wayne

*Richard R. Grady (I)

*Martin Lancaster (I)

12th District - 2 seats - Bladen, Pender (part), and Sampson

*Edward C. Bowen

*G. Ronald Taylor (I)

13th District - 2 seats - New Hanover (part)

*Harry E. Payne (I)

Sue T. Dean

Thomas E. Hodges, Jr.

*S. Thomas Rhodes (I)

14th District - 1 seat - Brunswick, New Hanover (part), and Pender (part)

*Tom Rabon, Jr. (I)

Shirley C. Babson

15th District - 1 seat - Columbus

Richard Wright (I)

16th District - 3 seats - Hoke, Robeson, and Scotland (part)

Daniel H. Devane

William C. Gay (I)

Sidney A. Locks (RO for all)

Bernard Lowry

John T. Wellington

John C. Hasty

17th District - 2 seats - Cumberland (part)

C. R. Edwards

Luther R. Jeralds

18th District - 3 seats - Cumberland (part)

*William E. Clark (I)

John L. Carter, III

*R. D. Beard (I)

Louis A. Waple

Henry M. Tyson (I)

19th District - 2 seats - Harnett and Lee

Bob R. Etheridge (I)

*Dennis A. Wicker (I)

20th District - 2 seats - Franklin and Johnston

*John M. Radford (I)

Barney P. Woodard

21st District - 6 seats - Wake

*Allen Adams (I)

Lenora Evans

*Daniel T. Blue (I)

Phillip Matthews

*Ruth E. Cook (I)

Thomas P. McNamara

*Aaron E. Fussell (I)

Carol Nemitz

*Marvin D. Musselwhite (I)

Ernest C. Pearson

*Margaret Stamey

22nd District - 3 seats - Caswell, Granville, Halifax (part), Person, Vance, and Warren

James W. Crawford, Jr.

*John T. Church (I)

*William T. Watkins (I)

23rd District - 3 seats - Durham

*George W. Miller, Jr. (I)

*W. Paul Pulley (I)

*Kenneth B. Spaulding (I)

24th District - 2 seats - Chatham)part) and Orange

Anne Barnes

Joe Hackney (I)

25th District - 4 seats - Alamance, Rockingham, and Stokes (part)

*Bertha B. Holt (I)

Tommye Allred

*John M. Jordan (I)

Robert L. Simpson

*Robert L. McAlister (I)

*Timothy H. McDowell (I)

26th District - 1 seat - Guilford (part) and Randolph (part)

Herman C. Gist

Wesley Clark

27th District - 3 seats - Guilford (part)

Thaddeus A. Adams, III

*J. Howard Coble (I)

Ralph P. Edwards (I)

Margaret P. Keesee (I)

Mary P. Seymour (I)

Richard J. Bryan

28th District - 2 seats - Guilford (part)

*Mary Jarrell

Dorothy R. Burnley (I)

Wilbur T. Amaker
(RO)

Phillip Cates

Phillip R. Dixon

29th District - 1 seat - Forsyth (part) and Guilford (part)

*William T. Grimsley, M.D.

William H. Anderson

30th District - 1 seat - Chatham (part) and Randolph (part)

Ralph Bulla

Frank Redding

31st District - 1 seat - Moore

*T. Clyde Auman

James M. Craven

32nd District - 1 seat - Richmond and Scotland (part)

*Thomas B. Hunter (I)
(RO)

Walter C. Kelly

Hugh Lee

33rd District - 1 seat - Anson and Montgomery

Foyle Hightower, Jr.

34th District - 4 seats - Cabarrus, Stanly, and Union

Joe R. Hudson

Ellis Almond

*Dwight W. Quinn (I)

James C. Johnson, Jr.

*Robert L. Slaughter

Coy C. Privette

*Betty Dorton Thomas (I)

Robert E. Martin, Jr.

35th District - 2 seats - Rowan

Francis B. Dedmond

Bradford V. Ligon (I)

Robie L. Nash (I)

Charlotte A. Gardner

36th District - 8 seats - Mecklenburg

Phillip O. Berry

J. B. Black (I)

*Louise S. Brennan (I)

*Ruth M. Easterling (I)

*Gus Economos (I)

*Jo Graham Foster (I)

*Parks Helms (I)

James F. Richardson

Irvin W. Cobb

J. Myers Cole

Russell S. Davis, Jr.

Glenn Fogle

K. Larry Hale

*Bruce Lentz

*L. P. Spoon (I)

Robert J. Wujciak

37th District - 3 seats - Davidson, Davie, and Iredell (part)

J. E. Lambeth

John W. Varner

Ramey F. Kemp

Terry D. Grubb

Melvin L. Stamey (I)

Betsy L. Cochran (I)

38th District - 1 seat - Randolph (part)

L. L. Smithey

*Harold J. Brubaker (I)

39th District - 5 seats - Forsyth (part)

R. J. Childress

C. B. Hauser

*Annie Brown Kennedy

*Margaret Tennille (I)

*Tom C. Womble

Fred S. Hutchins, III

Michael J. Lewis

*Frank E. Rhodes (I)

40th District - 3 seats - Alleghany, Ashe, Stokes (part), Surry, and Watauga (part)

Margaret B. Hayden (I)

J. Worth Gentry

David A. Diamont (I)

John A. Salmons

William S. Hiatt (I)

41st District - 2 seats - Alexander (part), Wilkes, and Yadkin

*John W. Brown (I)

*George M. Holmes (I)

42nd District - 1 seat - Iredell (part)

J. P. Huskins (I)

43rd District - 1 seat - Alexander (part), Catawba (part), and Iredell (part)

James V. Houston

C. Robert Brawley (I)

44th District - 4 seats - Gaston and Lincoln

*S. L. Beam (I)

*David M. Bumgardner, Jr. (I)

*D. R. Mauney, Jr., (I)

J. B. Roberts

Thelma Herrin

Henry S. Long

W. C. Shields

45th District - 2 seats - Burke (part) and Catawba (part)

Daniel R. Green, Jr.

Thomas C. Hurley

Austin M. Allran (I)

*J. Reid Poovey (I)

46th District - 3 seats - Alexander (part), Avery, Burke (part), Caldwell, Mitchell, and Watauga (part)

*James F. Hughes (I)

*S. B. Lacey, Jr. (I)

*George Robinson (I)

47th District - 1 seat - Burke (part)

Ray C. Fletcher
(RO)

Ruby T. Hooper

*W.H. Lachot

48th District - 3 seats - Cleveland, Polk, and Rutherford

*John J. Hunt (I)

*Edith L. Lutz (I)

*Charles Owens

49th District - 1 seat - McDowell and Yancey

Robert C. Hunter (I)

50th District - 1 seat - Henderson (part)

Mae M. Alexander

Charles H. Hughes (I)

51st District - 4 seats - Buncombe, Transylvania, and Henderson (part)

Marie W. Colton (I)

Jerry Bowles

*Narvel J. Crawford (I)

Dudley Camper

Gordon H. Greenwood (I)

*Martin L. Nesbitt (I)

52nd District - 2 seats - Graham (part), Haywood, Jackson, Madison, and Swain

Charles Beall (I)

*Liston B. Ramsey (I)

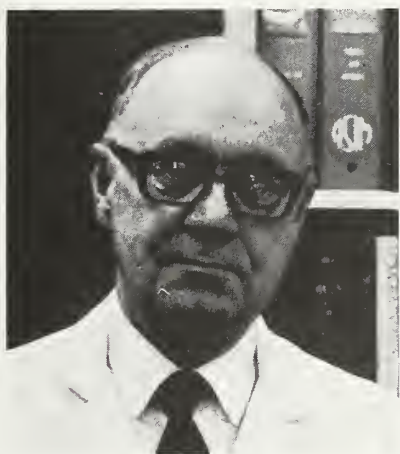
53rd District - 1 seat - Cherokee, Clay, Graham (part), and Macon

*Jeff H. Enloe, Jr. (I)

Billy J. Cook

"THE PHYSICIAN IS A DECISION MAKER, AND ALMOST EVERY DECISION HE MAKES COSTS OR SAVES MONEY."

—Dr. William Felts, Past President,
American Society of Internal Medicine



More and more physicians today are beginning to realize the extent of the economic influence they have, and are finding ways of holding costs down.

A number of studies show that the more physicians *know* about costs, the more they try to *reduce* them.* And this reduction can be done without reducing the quality of care to the patient.

How are they doing this? As a start they have become thoroughly familiar with the costs they incur on behalf of their patients. They know how much an X-ray costs, how much their

hospital charges for routine lab tests. They're requesting copies of patients' hospital bills. And asking their hospitals to print the charges for diagnostic tests right on the order sheet.

What else are physicians doing? Minimizing their patients' hospital stays, whenever possible. Reevaluating routine admissions procedures. Questioning the real need of the diagnostic tests they order for their patients. Avoiding duplicate testing. Trying to discourage their patients' demands for unnecessary medication, treatment or hospitalization. Compiling daily logs of their medical decisions and what they cost. And more.

More physicians today realize what a tough problem we're all faced with. They know this is a challenge for medicine. And that physicians are in the best position to deal with and solve the problem.

*PATIENT CARE Magazine—Outlook 1977, "Face-Off: Cost Containment vs. Chaos," January 1, 1977.

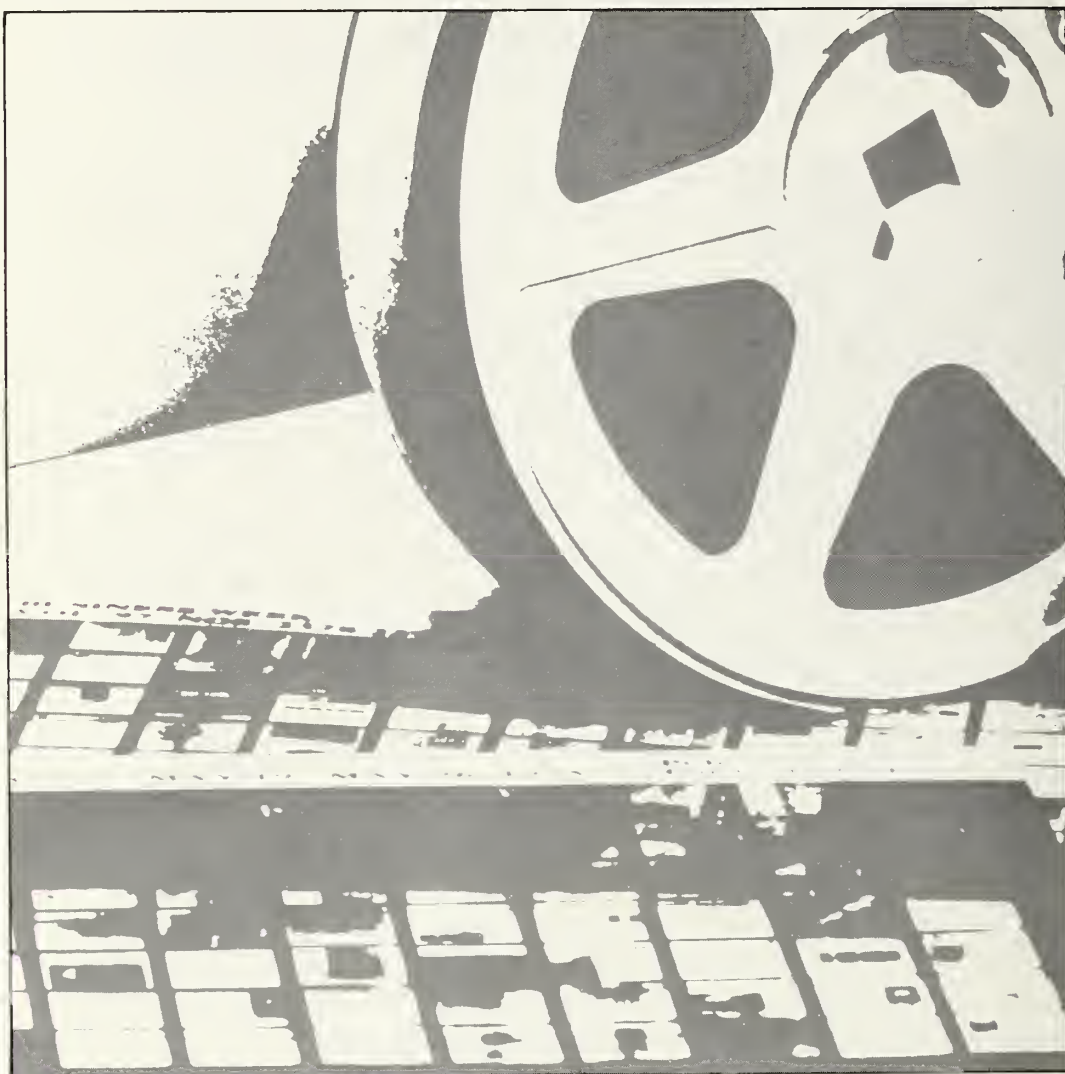
Lyle CB, et al. "Practice habits in a group of eight internists," ANNALS OF INTERNAL MEDICINE 84 (May 1976), 594-601.

Schroeder SA, et al. "Use of laboratory tests and pharmaceuticals: variation among physicians and effect of cost audit on subsequent use," JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION 225 (Aug. 20, 1973), 969-73.



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INDICATIONS: Therapeutically (as an adjunct to systemic therapy when indicated), for infections, primary or secondary, due to susceptible organisms, as in: infected skin grafts, surgical incisions, otitis externa • primary pyoderma (impetigo, tinea, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, hemorrhagic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection. Prophylactically, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and wound healing.

CONTRAINDICATIONS: Not for use in the eyes or in the external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive ulceration and other extensive conditions where absorption of neo-



mycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

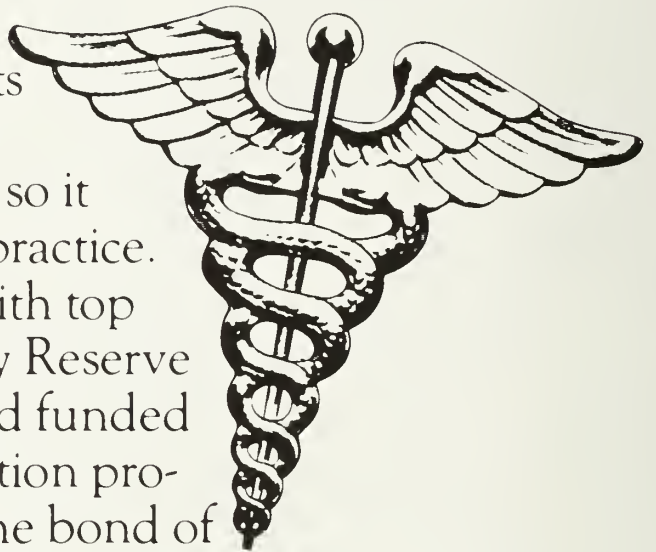
ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section). Complete literature available on request from Professional Services Dept. PML.



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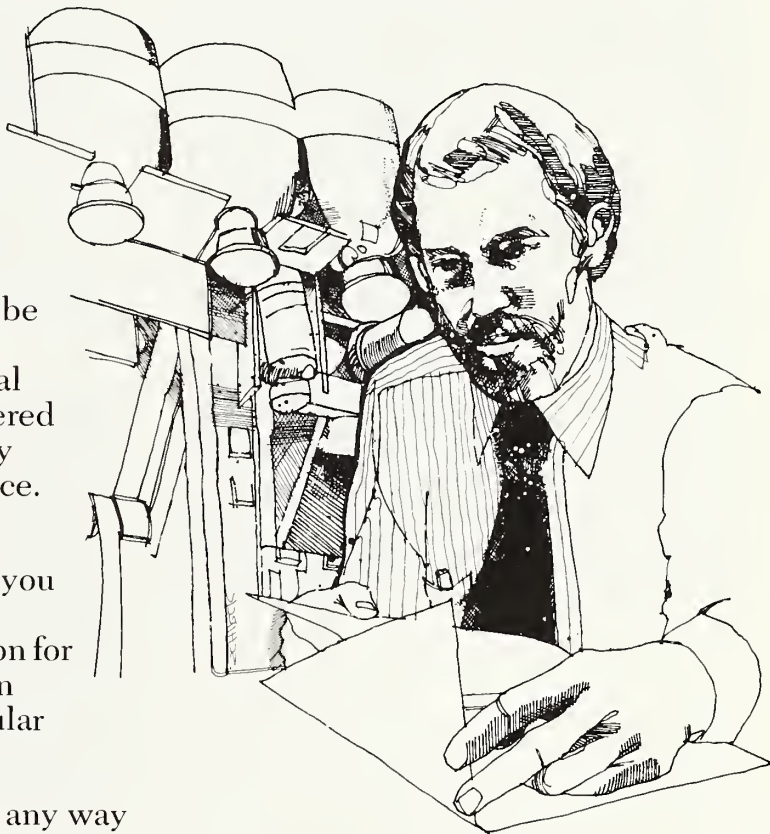
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Are Pain Centers Viable?

Jawahar N. Ghia, M.D., and Kenneth Sugioka, M.D.

ABSTRACT Chronic pain (pain of more than six months duration) is one of the most common disabling illnesses in this country, and thus constitutes a serious national health care and economic problem. Americans spend between \$50 and \$100 billion annually to relieve suffering from chronic pain,¹ and the condition accounts for a tremendous total loss of manhours from work. Treatment, which is in its infancy, is time-consuming, expensive and complex. The most promising approaches to treatment have come out of interdisciplinary pain centers such as the one established at the University of North Carolina (UNC) in 1972. Our purpose in this article is to discuss some important problems that jeopardize the continued existence of pain centers and to propose some solutions.

Distinctions Between a Pain Center and a Pain Clinic

It is important at the outset to distinguish between a pain center, of which there are only about a dozen in the country at present, and the pain clinics springing up all over. Although both pain clinics and centers acknowledge the advantages of a multidisciplinary approach, in practice most clinics emphasize a single modality (e.g., biofeedback) or specific site of pain (e.g., headache clinic), both largely determined by the founder's specialty and experience. Centers and clinics use the same means (e.g., nerve blocks, drugs, biofeedback, etc.) to accomplish their ends — easing pain — but the scope of centers is broader than that of clinics, which must of necessity take an empiric approach. As a consequence, basic mechanics cannot be investigated, and the chosen method may yield usually temporary relief of pain. A pain center, on the other hand, focuses attention on the full spectrum of chronic pain. Ideally, a pain center concentrates a group of scientists and clinicians in a centrally

located facility under the direction of a fulltime physician and so might be funded from federal sources.

Evolution of a Pain Center in a Medical Center

A medical center is capable of offering a multidisciplinary approach because individuals with specialized skills and talents can provide the many techniques and procedures that are needed to manage pain. Experience at our center and elsewhere suggests that patients with pain treated from a limited approach do not achieve prolonged relief. A recent National Institute on Drug Abuse conference concluded that "many patients with non-malignant chronic pain do not respond to the usual medical therapy," are at risk for iatrogenic complications, turn to quacks, and consider suicide.² Innovative approaches, as well as more individualized combinations of modalities that promise to break this tragic pattern, are most likely to grow out of a multidisciplinary group. Furthermore, a medical center is well suited for teaching these modern techniques to practicing physicians who eventually will be responsible for controlling the patient's pain.

Despite these advantages and the fact that we have made greater progress toward understanding and treat-

ing chronic pain in the two decades since pain centers were established than in the previous century,² comprehensive centers for pain appear to have difficulty surviving while pain clinics are thriving. These difficulties are well exemplified in our experience here. Our center was organized in 1972 by a dental surgeon and an anesthesiologist with a basic research interest in the mechanisms of pain.³ The pioneering efforts by Dr. John Bonica and his associates, who established the first multidisciplinary center in 1962 at the University of Washington^{4,5} served as a model. The North Carolina Center differs in that it concentrates on outpatient services and emphasizes basic and clinical research heavily. It is an organized facility with space and personnel for the evaluation of the interaction of the physical, emotional, and sociological aspects of chronic pain problems. Through clinical conferences and research collaboration between disciplines, the center can advance the interdisciplinary approach to pain management.

The center's growth during the past 10 years has been phenomenal. We currently can handle about 800 new patients and 2,400 clinic visits per year. We have published more than 200 scientific articles during the past two years. Our success has

From the University of North Carolina Pain Center and the Department of Anesthesiology, the University of North Carolina School of Medicine, Chapel Hill, N.C. 27514

Reprint requests to Dr. Ghia
North Carolina Memorial Hospital 204H
Chapel Hill, N.C. 27514

brought about a sense of awareness among all physicians of the need for continued innovations in managing chronic pain. This in turn has stimulated the administrative actions needed to maintain services and continue research programs. A permanent location and clinic space have been officially designated for the Pain Center. The new director has been given professional responsibility for managing a single unit composed of experts from many disciplines. He makes decisions on controversial as well as mechanical issues. Unfortunately, however, most centers have not developed as successfully. Lack of stability and institutional support in the crucial early phase, and often too heavy dependence on limited programs, have discouraged participation from other key disciplines. Thus single-focus clinics result, diluting the potential. We believe that these problems are not specific to any medical center but rather reflect both well-recognized incompatibilities between disciplines and the administrative structure of the typical center. There are also less obvious conflicts with tradition in that new programs may be viewed with great suspicion. We shall discuss here the genesis of these problems and their solutions.

Administrative Impediments in a Medical Center

Medical centers because of size, complexity and the special nature of their function do not fit easily into any administrative model. The demands of an interdisciplinary program (part-time consultants, contributions from several departmental budgets, etc.) make hospital administrators hesitate to offer or withhold support. Finances at medical centers are always tight, and the pain center has high patient volume but low financial return per patient.

Pain centers can certainly generate revenue, but it is unrealistic to expect them to be self-supporting, any more than many other teaching hospital endeavors. So at state-supported university hospitals, a high percentage of patients would probably be medically indigent, as well as unemployable because of their illnesses. Their referrals are re-

quired, not elective. A pain clinic developing as a part of a pain center may exist with partial funding from several sources including individual research grants and departmental contributions (e.g., space, shared secretarial help). But as the patient load grows, these funds will be inadequate and too uncertain to achieve necessary cost-effectiveness.

In general, funding for centers has been limited to experimental equipment, supplies and salaries. Ancillary personnel has been severely limited, forcing clinicians and researchers to give too much time to administration. Extensive funds for renovation are not readily available. In any event, a prerequisite for application for any substantial center grant is a period at a low level of funding, presumably supplemented by the institution, followed by a more intensive appeal for more money. Currently, all grants are subject to the most intense scrutiny and require substantial institutional commitment. It is highly unlikely that any group will be successful in obtaining federal or foundation funds without evidence that its institution supports the effort both financially and administratively.

As Bonica and others have emphasized, the visibility and growth of a pain center depend on having a strong director with a clearly defined position within the hospital hierarchy. Anyone given the responsibility for developing a program of this kind must devote a major share of his efforts to administration, particularly during its early phases. The position of a director is very precarious in the sense that it is affected not only by the prevailing climate in his "academic home" but also by the administrative environment in other specialties participating in the pain center and by the attitudes of the medical center. Beyond this, there is the problem of which specialist should become director. Generally speaking, there is no agreement about whether the director should be an internist, neurologist, psychiatrist, neurosurgeon or anesthesiologist.

The clinic faces problems of staffing. Resolution of such a simple question as what day should be

chosen for clinic can take several weeks to resolve. There is also variation in service capabilities from year to year as pain consultants leave the institution. Sometimes it is difficult to fill a position because of the level of expertise needed. So the clinic must curtail services in some areas.

Space, too, is always a problem in a medical center, which has to continue to expand to meet increasing demands and provide new specialty services in a progressive medical community. Establishment of pain centers in all likelihood is a low priority of medical centers dominated by the assumptions of traditional medicine. In a recent conference at the National Institute on Drug Abuse, Bonica stated: "Professional education is a crucial issue because most physicians do not know the basic principles of managing acute and chronic pain."⁶ It is understandable then why these physicians do not appreciate the space needs of a pain center. When space is available, however, frequently the rather high rent charged by the hospital and the dismal collection rate from pain patients do not allow it to run the operation above the break-even point.

Medical Tradition vs. Interdisciplinary Programs

Traditions in medicine can also affect the development of a pain center in less obvious but more crucial ways. Traditional departments and individuals within the medical center may be suspicious and resistant to new programs. Rewards to physicians in academic medicine come primarily through research and performance along strict disciplinary lines. Departments and divisions are often unwilling (sometimes because of lack of knowledge in the field) to evaluate research and service coming out of cooperative interdisciplinary ventures. In addition, even when a new field of biomedicine such as chronic pain is accepted, faculty members may tend to identify it with a single personality. If the person who developed the program leaves, the program is seriously threatened.

The nature of the patient population with chronic pain can perhaps

account for the apparent indifference to the need for a pain center. Some generalizations about patients follow:

- a) The patient's pain does not have a clear-cut etiology.
- b) Patients have psychological problems.
- c) Patients have difficult, demanding personalities.
- d) Patients may return to the sick role for secondary gains such as disability payments.
- e) Patients are non-productive (can't hold down a job; are receiving public assistance).
- f) These patients are rarely completely cured and physicians prefer to cure (usually an acute illness) than to maintain a patient in a state of acceptable discomfort.
- g) The inexorable persistence of the pain problems creates a vicious circle wherein pain brings on stress and underlying anxieties or psychopathologies which in turn serve to intensify pain.

Put simply, physicians, being human, do not like to be reminded of their "failures," many of whom end up in the pain clinic.

Starting a Center

It is essential that the problems which militate against the establishment of pain centers be overcome if we are to consolidate the gains we have made in reducing the burden of chronic pain. There are no simple remedies. We must recognize that within the medical community and in hospital administration the study and treatment of chronic pain are distinct entities. Beyond this, many traditions in medicine must be overcome if acceptance and permanent financial support for an interdisciplinary program are to be achieved. Administratively, the pain center director

needs direct access to executives of the involved institutions and must obtain consent from individual department heads to release their faculty for work in the pain center and to recognize their pain-related research in evaluations for promotions. A fulltime director and adequate ancillary personnel can help assure that the center operates effectively and cooperatively. The establishment of an autonomous, flexible trust fund with disbursement to participating faculty related to level of clinical activity could strengthen the program.

It might be advantageous for the pain center to have a research focus which reinforces the common purpose of the participants. A very large pain clinic results in diffusion of the efforts of the staff and inhibits research. It is easy for the pain clinic to become a secondary medical center for the problems no one else can solve. A modest, well-focused start may be preferable. In our center, much of the early work was with maxillofacial pain because the clinic was located in the Dental Research Center, and we had a number of clinicians already working in this area.

With time, a multifaceted program consisting of greatly expanded research and research training programs must be formed; highly effective teaching programs for students and practitioners must develop; and communications with all branches of medicine must be maintained. The public, members of Congress, people in federal, state, and municipal governments, insurance carriers, science writers and many others must be informed as well so they will understand the magnitude of the human and economic impact of pain.

Conclusions

The majority of patients afflicted

by chronic pain are in the prime of their life, between 30 and 50 years of age. Often they are no longer economically productive. A subtle, insidious relationship exists between the pain and the behavioral and drug patterns that develop, making the problem worsen over the years. Single modality methods have not brought relief to most patients. The medical community as a whole needs to give its full support to the development and preservation of a selected number of pain centers. Recent work from these centers indicates that recognition of the complex nature of the problem, in and of itself, can lead to better diagnosis and therapy. The clinical research in such fields as biofeedback and basic research in such areas as endorphins and electromechanical nerve blocking hold great promise that we will find ways of reducing the number of people incapacitated by chronic pain. Such an achievement is well worth the efforts needed to remove the current barriers to the growth and maintenance of pain centers.

Acknowledgments

The authors thank Mrs. Lou Ann Brower for her expert editorial assistance. The secretarial help of Mrs. Rita Denny is also acknowledged.

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MOSES BEN MAIMON (MAIMONIDES) [1135-1204]

Honey and wine are bad for children but salutary for the elderly especially in the rainy [winter] season. A person should eat in the warm [summer] months two thirds of what he eats in the rainy [winter] months.

Mishneh Torah, "Hilchoth De'oth," Ch. IV, No. 2 (tr. by Fred Rosner in *Annals of Internal Medicine* 62:372, 1965)

Rational Use of Local Anesthetic Drugs

Charles H. McLeskey, M.D.

ABSTRACT Local anesthetic drugs have many clinical uses. An understanding of the structure, types, and doses of local anesthetic drugs, and of the techniques for safe administration of these agents reduces the risk of toxic reactions. When local anesthetic drugs are employed in large quantity, resuscitative equipment must be available and pharmacologic techniques for treatment of victims of toxic reactions must be understood.

LOCAL anesthetic drugs are widely employed by almost all health practitioners. In addition to being used as antiarrhythmics when given intravenously, local anesthetic drugs may also be applied topically, infiltrated, or injected to produce field, central or peripheral nerve blocks. Here I present a review of nerve transmission and of the pharmacology and mechanism of action of local anesthetic drugs. In addition, a rationale for selection of the proper type and dose of local anesthetic drugs is presented and methods to prevent or treat unwanted side effects from their use are offered. Maximum allowable dose, utilization of epinephrine, and local anesthetic drug allergenicity are also discussed.

MECHANISM OF NERVE TRANSMISSION

Following chemical, mechanical, or electrical stimulation, myelinated and non-myelinated nerves transmit impulses along their axons via sequential depolarization. De-

polarization results from a rapid influx of sodium ions from the external to the internal milieu of the nerve fiber. Non-myelinated nerves undergo a wave form depolarization along their axons. In contrast, myelinated axons which are wrapped in an insulating lipid membrane (Schwann cell) transmit impulses in a more rapid leap-frog manner with depolarization occurring only at areas lacking myelin (nodes of Ranvier). This leap-frog transmission is known as saltatory conduction.

MECHANISM OF ACTION OF LOCAL ANESTHETIC DRUGS

The lipid membranes of both myelinated and non-myelinated nerves contain pores through which sodium is transported from the outside to inside to produce depolarization. Local anesthetic drugs in or near the proteinaceous pore structures of lipid membranes slow or prevent sodium migration, so that depolarization is inhibited and nerve conduction prevented.

ANATOMY OF LOCAL ANESTHETIC DRUGS

Figure 1 illustrates the basic structure for most local anesthetic drugs. A lipophilic portion (benzene ring derivative) is connected to a hydro-

philic portion (substituted amine) through an ester or amide linkage. Both amide and ester types are manufactured as the uncharged tertiary amine form which is an unstable weak base (B, Fig. 2).¹ It is therefore combined with a strong acid (usually hydrochloric acid) which permits equilibration of the free base form with its new, more stable, quaternary amine (cationic) form (BH⁺, Fig. 2). The two forms of the drug are important because the uncharged, lipophilic tertiary amine form can diffuse through lipid membranes surrounding neurons where it re-equilibrates to the quaternary amine form. This form attaches through a hydrophilic bond to neuronal receptor sites and produces a block.

Increasing the percentage of local

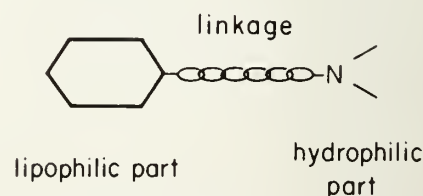


Fig. 1. The diagrammatic structure for most local anesthetic drugs. A lipophilic portion (substituted benzene ring) is connected to a hydrophilic portion (substituted amine) by either an ester or amide linkage. (Reprinted with permission, from deJong RH: *Physiology and Pharmacology of Local Anesthesia*. Springfield: Charles C. Thomas, 1970, p. 63.)

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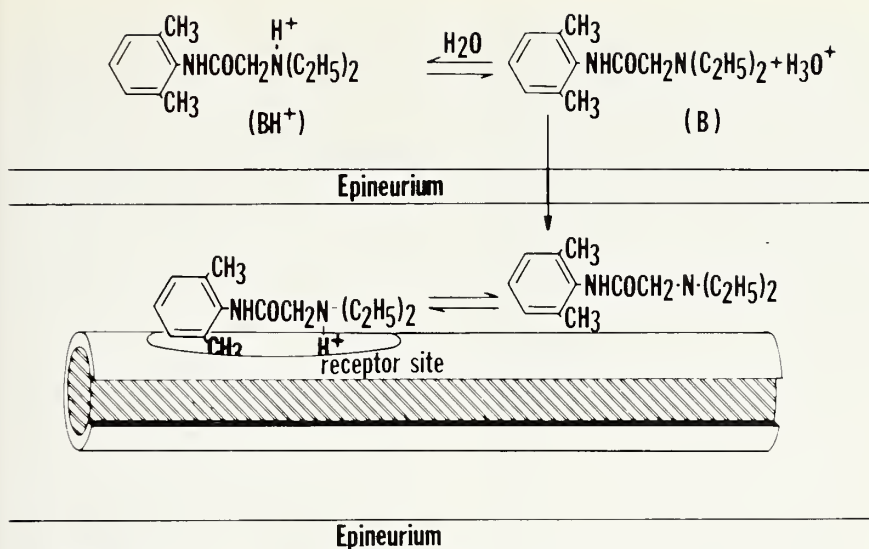


Fig. 2. Illustration of the equilibrium between the uncharged, tertiary amine, free-base form (B) and the charged, quaternary amine form (BH⁺) of local anesthetic drugs the uncharged, lipophilic form is necessary to diffuse across membranes surrounding neurons. The hydrophilic form (BH⁺) is necessary to attach to receptor sites on neurons to provide conduction block. (Reprinted with permission from Covino and Vassallo, p.32¹)

anesthetic agents in the uncharged form makes more drug available for diffusion across membranes and permits greater axonal neuronal block. Should the drug be injected in an acidic area of the body, e.g., an abscess, more anesthetic would be converted into the cationic form which would not diffuse across membranes and thus would produce a less profound block.

Esters and amides differ in their metabolism and allergenicity (Table I). Esters are rapidly hydrolyzed by circulating plasma pseudocholinesterase, but, unfortunately, have allergenic potential. Amides are metabolized in a slower, more complex fashion by hepatic mixed oxidases. Allergic reactions to amides are quite rare.

Historically, esters were the first local anesthetic drugs identified and manufactured. Cocaine, the first

TABLE II
Nerve Fiber Classification

Class	Size (μ)	Myelin	Function
A α	10-20	+	Motor, proprioception, reflexes
A β	8-13	+	Touch, pressure
A γ	4-8	+	Efferent muscle spindle
A Δ	2	+	Pain, temperature
B	1-3	+	Pre-ganglionic sympathetic
C	1	-	Pain, temperature

such compound used in the United States, was popularized by Halsted in 1884. In 1904, another ester, procaine, was synthesized for clinical use. Subsequently, many other esters have become available. More recently, commercial firms have offered more amides (e.g., bupivacaine, etidocaine, and mepivacaine) because of their reduced allergenic-

ity. Only one recently introduced ester type local anesthetic, chloroprocaine, has gained popularity because it is rapidly metabolized by circulating plasma pseudocholinesterase and has a half life of only 21 seconds.

KINETICS OF LOCAL ANESTHETIC DRUGS

The most common mistake made by physicians after the injection of local anesthetics is to test the blocked area and ask the patient, "Do you feel that?" When cutaneous areas are touched or stimulated, before the block is complete, patients will usually respond that they feel something, and become alarmed that the anesthetic is not working. It is much more reassuring to patients to be informed before

the block that they may very well have some sensation afterwards but probably will not feel pain.

Early loss of pain and delayed loss of touch sensation are explained by the different sizes of nerves. Large fibers require more local anesthetic drug and a longer time after injection to be blocked. Table II classifies nerve fibers according to size and presence or absence of myelin. The larger fibers, A alpha and A beta, modulate touch, pressure and motor function. The smaller A delta and C fibers mediate pain, temperature and sympathetic tone. As a result, loss of pain and temperature sensation, and sympathetic tone (producing peripheral vasodilation) occur first. Loss of touch and motor function follow much later. With a spinal anesthetic, patients may even

TABLE I
Local Anesthetic Drugs

Esters

- 1) Procaine (Novacaine)[®]
- 2) Tetracaine (Pontocaine)[®]
- 3) Cocaine
- 4) Chlorprocaine (Nesacaine)[®]
- 5) Benzocaine

Amides

- 1) Lidocaine (Xylocaine)[®]
- 2) Mepivacaine (Carbocaine)[®]
- 3) Bupivacaine (Marcaine)[®]
- 4) Prilocaine (Citanest)[®]
- 5) Etidocaine (Duranest)[®]

Table III

Drug	Concentration (%)	Duration (min.)	Maximum Dose (mg/kg)
Short Duration Chloroprocaine	1-3	30-90	10
Moderate Duration Lidocaine	1-2	60-180	4.5
with Epinephrine	1-2	90-240	7.0
Long Duration Bupivacaine	0.25-0.75	180-360	1-3
Tetracaine	0.2-0.5	180-360	1-2

retain some motor function and position sense, despite the presence of complete analgesia.

CHOICE OF LOCAL ANESTHETIC DRUGS

Table III lists four useful drugs with their expected duration of action after subcutaneous infiltration or regional nerve block. Bupivacaine, a potent local anesthetic drug, is injected in concentrations of 0.25%-0.75%, whereas lidocaine, a less potent drug, is utilized in concentrations of 1%-2%. Although a reduced milligram dosage of more potent local anesthetic drugs is required, there is little, if any, reduction in toxicity because drugs which are more potent are usually more toxic. Thus, little therapeutic advantage is gained by injecting a local anesthetic drug of higher potency.

Modern local anesthetic drugs are not selected on the basis of toxicity,

but rather, by the duration of action desired. An ideal block produced by local anesthetic drugs is one which has rapid onset and a long duration of action. Many clinicians mix local anesthetics to provide rapid onset from one agent and prolonged action from another. For instance, chloroprocaine (quick onset) may be mixed with bupivacaine (long duration of analgesia). However, toxicity is additive whether the two drugs are both esters, or amides, or a combination of the two.²

LOCAL ANESTHETIC DRUG TOXICITY

Systemic side effects following injection of local anesthetic drugs may be either allergic or toxic, related to the serum concentration of the absorbed agents. Independent of the site of injection of local anesthetic drugs (with the exception of an intravenous injection), the peak blood level resulting from absorption of the local anesthetic drug will usually be reached 15-25 minutes following injection³ (Fig. 3).

The central nervous and cardiovascular systems are most sensitive to toxic effects of absorbed local anesthetics. The effect on the CNS is initially one of inhibition, preferentially, of inhibitory fibers. Therefore, patients become hyperactive, loquacious, tremulous, irritable, restless, and may even convulse. They may also report perioral numbness and tingling or an unusual metallic taste in the mouth. Seizures induced by local anesthetic drugs generally arise from the amygdala, hippocampus and other limbic system structures.⁴

In addition to inducing cortical

hyperactivity, local anesthetic drugs augment medullary and sympathetic functions. Medullary hyperactivity results in tachypnea and hyperpnea, and sympathetic hyperactivity secondarily increases blood pressure, heart rate, cardiac output, and stroke volume. Interestingly, local anesthetic drugs also decrease myocardial excitability which explains their value for patients with ventricular ectopy.

If serum levels of local anesthetics become very high, both the inhibitory and excitatory fibers of the CNS are blocked. CNS activity slows and the patient may lapse into severe depression or coma. Medullary and sympathetic activity is also reduced and respiratory and cardiovascular functions depressed. The unmasked direct effects of local anesthetic drugs on the cardiovascular system include decreased blood pressure, heart rate, stroke volume, cardiac output, myocardial excitability and conduction. In extremis, local anesthetic toxicity may result in respiratory and/or cardiac arrest.

Although high circulating blood levels of local anesthetic drugs are potentially lethal, the relationship between the amount required to produce convulsions, compared to that required to produce death, varies from one drug to another. Theoretically, a local anesthetic drug with a wide margin of safety would be chosen, one whose lethal dose is considerably greater than the convulsive dose. DeJong and Bonin⁵ have determined the lethal dose for local anesthetics in 50% of tested mice (LD₅₀) and compared this to the dose required to produce convulsions in 50% of tested mice (CD₅₀). As summarized in Table IV, the margin of safety for lidocaine is greater than bupivacaine. A dose of

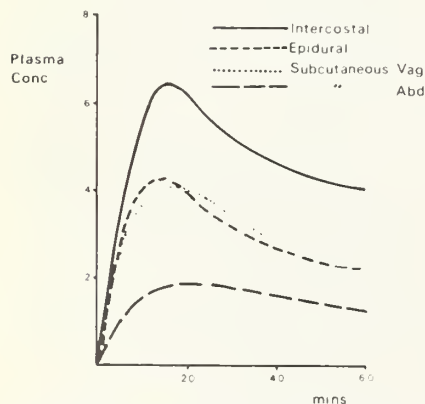


Fig. 3. A comparison of the peak plasma concentrations following injection of 400mg lidocaine at four different sites. Note that higher peak plasma concentrations result when injections are made into more vascular areas. (Reprinted with permission from Scott and Cousins, p. 108³)

TABLE IV

	LD ₅₀ /CD ₅₀ (%)	Lethality of CD ₅₀ (%)
Bupivacaine	102	90
Lidocaine	120	6
Chloroprocaine	110	57

bupivacaine only 2% greater than the convulsive dose resulted in death. Similarly, 90% of mice receiving the convulsive dose of bupivacaine died whereas only 6% of mice receiving the convulsive dose of lidocaine died. This suggests that lidocaine is a safer drug than bupivacaine. When applying these data clinically, one must be aware that if a local anesthetic, especially bupivacaine, induces seizure, the risk of death is great unless resuscitation is prompt and vigorous.

METHODS TO PREVENT LOCAL ANESTHETIC DRUG TOXICITY

Site of Injection

The site injected is important in determining eventual peak blood level of a local anesthetic (Fig. 3). In general, absorption of local anesthetic drugs is rapid from paracervical, caudal, or intercostal sites because high blood flow in these areas allows more rapid uptake. Drugs injected for epidural or brachial plexus blocks reach intermediate blood levels while lowest circulating levels follow subcutaneous injection.

Mode of Injection

Proper technique is essential. Unless the technique of intravenous regional block is being used, injection for regional blocks must not be into an artery or vein. Before and during injection, the syringe must be frequently aspirated to avoid an unwanted intravascular placement of the needle. If the needle is intravascular, the blood level following injection will be very high and the likelihood of toxicity increased.

Dose of Local Anesthetic Drugs

Approximations of the maximum allowable dose for subcutaneous injection of commonly used preparations are given in Table III. When local anesthetic drugs are injected in areas with higher perfusion, maximum dosages somewhat lower than those listed in the table should be employed.

If one assumes the allowable maximum subcutaneous dose of lidocaine with epinephrine is 7 mg/kg,

then approximately 500 mg may be given an average 70 kg patient. Thus, 50 ml of a 1% solution (10 mg/ml) may be injected. If a greater volume is required, the concentration of the local anesthetic drug may be reduced with minimal loss of blocking capacity. As a result, in the above example, approximately 100 ml of 0.5% lidocaine can be safely injected.

Addition of Vasoconstrictor

Addition of a vasoconstrictive agent to a local anesthetic solution reduces blood flow at the site of injection. The absorption of the drug and the peak blood level following injection are reduced. Use of a vasoconstrictor lessens the likelihood of toxicity following injection and permits a greater dose and volume to be given safely (see lidocaine, Table III). Since this is a higher concentration, the local anesthetic is maintained locally longer and the nerve block is prolonged (Table III).

The vasoconstrictor usually employed is epinephrine in a 1:100,000-1:400,000 concentration. A local anesthetic drug may be purchased with epinephrine premixed by the manufacturer, or epinephrine may be separately added immediately before injection. The maximal dose of epinephrine injected should not exceed 200 μ g in the average 70 kg patient, or approximately 3 μ g/kg. This is the equivalent of a 40 ml injection of a local anesthetic drug containing 1:200,000 epinephrine (5 μ g/ml). Local anesthetic solutions containing epinephrine should be used cautiously in patients with hyperthyroidism, atherosclerotic cardiovascular disease or hypertension. In addition, the epinephrine dose should be reduced in patients receiving inhalational anesthetics, especially halothane which sensitizes the myocardium to endogenous and exogenous catecholamines. Vasoconstrictors should not be added to local anesthetic drugs injected in regions supplied by end arteries, as fingers, toes, and ears.

TREATMENT OF TOXIC REACTIONS

Occasionally, a toxic reaction will occur after injection. When any large

volume of a local anesthetic drug is injected, resuscitative equipment must be available. If an individual suffers central nervous system or cardiovascular effects from absorption of the drug, cardiopulmonary resuscitation may be required. If premonitory signs of local anesthetic toxicity are present, but seizures and severe cardiovascular depression have not occurred, treatment consists of the following:

1) Apply oxygen by mask. This permits oxygenation of the lungs and will almost certainly prevent hypoxia during a seizure.

2) If conscious, the patient is asked to hyperventilate. The amount of local anesthetic drugs required to produce seizures is reduced by hypercarbia. Conversely, hyperventilation by lowering the arterial P_{CO_2} , reduces the cerebral excitability due to these agents.⁶ It is unclear how hypocarbia lowers the seizure threshold, but reduced cerebral blood flow associated with hypocarbia may decrease the delivery of the agent to the brain.

3) Pharmacologic treatment is instituted. Intravenous diazepam and short-acting barbiturates, e.g., thiopental, are effective in aborting fits by reducing the sensitivity and neurons in the CNS, especially the limbic system, to the excitatory effects of these drugs. Other CNS depressants, e.g., droperidol, also reduce

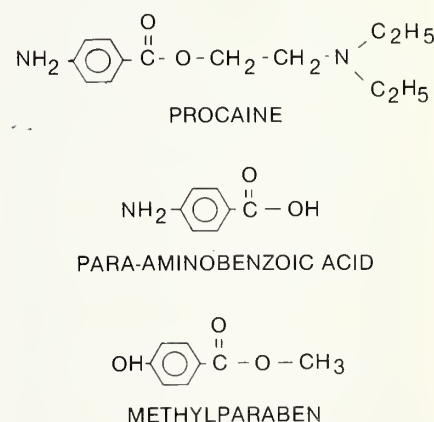


Fig. 4. A comparison of the chemical structures of procaine (an ester local anesthetic), methylparaben (a preservative), and the known allergen, para-aminobenzoic acid. Allergenicity for procaine and methylparaben is suggested by their very close chemical structure to that of para-aminobenzoic acid.

CNS excitability, but have been less well studied.

If seizures occur, despite these maneuvers, neuromuscular blockers (e.g., succinylcholine, pancuronium) may be given until the concentration of circulating drugs has fallen and convulsions have stopped.

ALLERGENICITY OF LOCAL ANESTHETIC DRUGS

About 90% of all reactions to local anesthetic drugs occur in a dentist's office. Although frequently suspected, an allergic reaction to local anesthetic drugs is rare, especially with amides.⁷ Much more likely explanations for these reactions include:

1) Allergic reaction to the preservative (methylparaben) in the solution.

2) Beta adrenergic agonistic effects from absorbed vasoconstrictors, e.g., tachycardia, arrhythmia.

3) Effect of intravenous entry of injected local anesthetic drugs.

4) Vasovagal reaction or hyperventilation due to the stress of an intraoral injection.

Esters are derivatives of the allergen, para-aminobenzoic acid, suggesting they share its allergic potential (Fig. 4). Amides have a completely different structure and are less likely to be allergenic. Many contain preservatives, most frequently methylparaben, which is closely akin to para-aminobenzoic

acid structurally. Local anesthetic preparations manufactured in ampoules or vials for single use do not contain preservatives.

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Our knowledge of external nature is derived from bodies, either at rest or in motion. Upon each of these states, some remarks suggest themselves: first, with regard to the operations of the mind in receiving knowledge from bodies at rest.

When we look upon a mass of snow, the mind receives an impression, the result of the combined action of the particles of which this substance consists: it presents a white aggregate, which is cold, soft, &c.; into the idea of which enters simply a number of minute juxtaposed bodies. Regarded in this light, it is a whole, a mass totally distinct and separate from other bodies around it.* The mind, however, can take other views; for the mass of snow is composed of other substances, since it can be separated into oxygen and hydrogen; two bodies possessing still different properties: these again can be separated still farther into heat, light, and certain bases.

In these views, the mind considers the snow, as perfectly at rest, and composed of a certain number of bodies, arranged with regard to each other in certain relations,† and each of these are grouped together in a defined series. The same is true of the anatomy of the human body. That science considers the various structures, as they lie with regard to each other, in the system; and thus separates them, part after part; and acquires a knowledge of their situation, and the mode in which they operate upon each other, when set in motion.

*Brown's Lectures on the Human Mind.

†Ibid.

—*Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Calhoun, M.D. Vol. I, Philadelphia, Towar & Hogan, 1829.

Caroline Hampton Halsted and Her Family, Revisited

Wade Hampton King, M.D.

INTRODUCTION: For those less than familiar with Halsted of Hopkins and the Hamptons of South Carolina, these observations by a member of the Hampton family are offered. For those already aware of Halsted's contribution to medicine and to the role of the Hamptons in South Carolina government and history and of Wade Hampton III as a cavalry leader in the Civil War, Dr. King's comments will be a welcomed addition to the canon. William S. Halsted (1852-1922) has been described as a "mediocre student but an exceptional athlete" who in his last year at Columbia University became interested in medicine. After completing his medical education in New York, he went east — to Austria and Germany — as was obligatory in those days if one were to be involved at the medical frontier. Eventually at age 37 he reached The Johns Hopkins Hospital as one of the big four, Osler, Welch, Kelly, and Halsted. A fascinating description of a surgical house officership at the turn of the century at Hopkins under Halsted can be found in John Fulton's chapter, Halsted and The Johns Hopkins Hospital, 1896-1900, in his biography, *Harvey Cushing*. Fulton quotes freely from Cushing's remarkable letters where Halsted is portrayed as "shy . . . reclusive . . . fastidious . . . over-modest . . . and indifferent to matters of priority."

Halsted spent much time at Cash-

iers after his marriage and once wrote Cushing, his chief resident, telling him to get messages to southwestern North Carolina — by telegram to Hendersonville, by telephone to Brevard, then by telephone to Sapphire and, finally, by horseback to Cashiers.

Much too has been written about Wade Hampton III, but the best portrait of the man among his contemporaries is probably that offered by Mary Boykin Chesnut in her engrossing Civil War memoirs, earlier published in part as *Diary From Dixie*, edited by Ben Ames Williams, and more comprehensively and accurately as *Mary Chesnut's Civil War*, New Haven, New York: Yale University Press, 1981, edited by the well-known and accurate chronicler of Southern history, C. Vann Woodward.

J.H.F.

IT certainly is an honor and pleasure for me to address such a distinguished group as the surgeons of the Halsted Society and their guests. Personally, it is particularly special to be here in this fine environment which is very close to my heart.

My personal interest in the Hamptons stems from my membership in the lineage. Wade Hampton III was my great-great grandfather. As a history major at Princeton University, I took the opportunity to combine interests in my family history with studies in Southern Reconstruction history. I ultimately wrote my senior thesis on the democratic reconstruction efforts in South Car-

olina, within which Wade Hampton played a prominent role.

It was only in my surgery clerkship of medical school that I learned of Dr. William S. Halsted and ventured late upon a weary night on call to the stacks for a biography. Despite quiet on the wards, I got little sleep that night due to excitement upon learning that Dr. Halsted's wife was a Hampton. No doubt, also, the discovery of this family link confirmed my previous intentions of pursuing a career in surgery.

I should add that in one respect my historical interests may have



Caroline Hampton Halsted (in 1889).

Reprinted from MacCallum, *William Stewart Halsted, Surgeon*, published by The Johns Hopkins University Press.

Presented to the Halsted Society meeting at High Hampton Inn, Cashiers, N.C., on Oct. 1, 1981.

come close to preventing me from pursuing a surgery career. In my third year of medical school, I learned abruptly of the historical inclinations of particular members of the faculty at Chapel Hill, especially those here tonight. One day in lecture, Dr. Colin Thomas asked me about the original work in parathyroid disease. Quickly I was informed of the role of the rhinoceros in the matter rather than that of the hippopotamus which I had just jokingly suggested. On my orals with Dr. Thomas, I had even worse luck. I was so ready and waiting to unleash my historical knowledge of disease and to reveal my connection with Dr. Halsted that I believe I temporarily forgot most all the surgery I had learned in the previous three months.

The focus of this evening's paper is Caroline Hampton Halsted, wife of Dr. William S. Halsted. To begin, I will provide a brief overview of Caroline's family background. In the course of this presentation also, I shall provide information as to the passage through hands over time of the lands known as High Hampton.

Caroline Hampton came from a family life of considerable historical interest. Anthony Hampton, her great-great grandfather, was among the first settlers from Virginia to move to the English colony of South Carolina, locating in Spartanburg County. As the Revolutionary era approached, settlers in the area were threatened by both the British and Indians, sometimes allied together against the colonists. Tragedy struck in 1776 when Anthony Hampton, his wife, one son and a grandson fell victims to an Indian massacre and were killed.

A surviving son, Wade Hampton I, fought with General Sumter in the Revolutionary campaigns near Charleston. Subsequently he served in the War of 1812, later leading forces on the Canadian frontier with the appointment of major-general. In addition to distinguishing himself in the military frontier, Wade I amassed large land holdings in South Carolina, Louisiana and Mississippi. He planted cash crops, particularly cotton, and built an estate near Columbia known as Millwood where

he and his family settled. It was he also who acquired the property in Cashiers Valley, North Carolina, which later came to be known as High Hampton.

Wade Hampton II was the least well known of this Hampton line. His military career was not nearly as distinguished as that of his father or his son. However, he did maintain a powerful position in the political arenas of the state due to his wealth and the fact that Millwood was such a social center for the aristocracy.

Wade Hampton III proved to be the most famous of the Hamptons. Born in 1818, he spent his early years in Columbia and Cashiers, followed by law studies at South Carolina College. Rather than law, he ultimately rested his attentions on farming. He expanded the Hampton family plantations in Mississippi and managed the production of often enormous cash crops in cotton, corn, rice and sugar.

Prior to the "war of northern aggression," Wade III served briefly in state public office. As conflict between the States began, he organized and funded the Hampton Legion to serve the Confederacy. Individually, he led very successful military campaigns, possibly more so than any other Confederate officer. After the death of General J. E. B. Stuart he assumed full command of the Confederate cavalry with the rank of lieutenant general. During the course of the war, he was wounded five times.

With both a brother and son killed in the war and his house burned, Wade Hampton tended to family and its severely strained financial interests in the immediate aftermath of the Civil War. Later he joined in the Democratic movement to defeat the Republican Reconstructionist regime in South Carolina. He was elected governor of the state in 1876 and 1878 after which he served as U.S. senator for twelve years. Though a symbol of the conservative Old South, Hampton's political philosophy upon close examination was strikingly more moderate than most South Carolinians. This is evidenced most significantly in his aversion to the strict white suprem-

acy promoted by the majority of Reconstruction Democrats and later Jim Crow advocates. Hampton's political career came to a close in 1890 when he was defeated by the pseudo-populist movement led by Benjamin Tillman.

A portrait of Wade Hampton III would not be nearly complete without mention of his sense of humor which seemed only to ripen with age. This is most clearly illustrated by a story. The time is 1893 and the place is Capon Springs, Virginia, west of Winchester. The scene involves Hampton, yet another Confederate general named Jubal Early and a group of young boys. The story reads as follows:

Hampton had a great fondness for teaching small boys how to catch fish with a bent pin.

It is scarcely remarkable also that he had a cork leg. He had been wounded in three different battles — in the head at the First Manassas, in the foot at Seven Pines and three times at Gettysburg.

Now, sitting in a rocking chair on the porch at the Springs, with "Old Jube" sound asleep in a rocker beside him, the greatly cavalry general smiled benignly at an awed circle of small boys.

He drew a long pin from his lapel and beckoned the boys to come closer.

"Watch this," he said, and drove the pin full-length into his leg (artificial). "Only two men in the world can do that. General Early's the other. Here . . ."

He passed the pin into a boy's doubtful hand.

"Stick me," he ordered.

The boy obeyed. Hampton's smile widened. He gestured toward the peacefully sleeping Early. "Now him."

In went the pin. Out of the rocker came Jubal Early. Out of Old Jube came a rebel yell as blood chilling as any at Chancellorsville.

Wade Hampton was shaking with quiet glee. A cork leg could come in right handy.

Caroline Hampton was the last of four children born to Sally Bax-

ter and Frank Hampton, younger brother of Wade Hampton III. She was born on Nov. 20, 1861, at Woodlands, a tract of Hampton land adjacent to the more renowned Millwood in Columbia, South Carolina. At a very tender age, she was deprived of both her parents. Her mother died at the age of 29 prior to Caroline's first birthday. Less than a year later, her father was killed in the Battle of Fleetwood Hill at Brandy Station near Culpeper, Virginia. Thus, she was left to be raised by her three "Aunties," as they were called — Caroline, Anne, and Kate.

Caroline spent most of her childhood in a house built behind the remaining columns of the once majestic Millwood mansion, burned by Sherman. Subsequently, she went to school at Edgehill near Monticello where she was supervised by a Miss Randolph, a great-granddaughter of Thomas Jefferson. At age eighteen, however, she returned to the Carolinas where she divided her time between Columbia and Cashiers Valley. She spent the majority of the next six years in these environs and was known to have been quite an animal lover with a particular passion for horses. She was recognized as a very skillful and graceful rider.

With their vast land holdings and cash crops, the Hampton family prior to the Civil War was reputed to be the wealthiest family in the South. However, this background did not deter the independent Caroline from beating her own path. In 1885, at the age of 25, Caroline left the South behind for a very different lifestyle in New York City. There she trained in nursing, first briefly at Mt. Sinai. Later she graduated from the New York Hospital program in 1888.

The following year she went to Baltimore and received an appointment in the surgical division of the new Johns Hopkins Hospital. There she was considered to be a good practical nurse aside from being a spirited person and quite a beauty. While delightful to friends, it has been noted that Caroline was a bit "curt and intolerant" to others. Possibly this attitude, her indepen-

dence and strong will led to a review of Caroline's circumstances by the chief of surgery at Hopkins, notably Dr. William S. Halsted. The latter arranged to have Caroline switched to a newly created position as head nurse in the operating room. Whether this move was helped along by an already inherent interest in Caroline by Dr. Halsted is unknown. In any event she did perform very capably in her new position.

Caroline bears indirect responsibility for the advent of the use of rubber gloves in the operating room. In her younger years, she had been the only member of her family to wear gloves in gardening due to her sensitive hands. This issue resurfaced late in 1889 when she developed a dermatitis resulting from the mercuric chloride solutions that she had been using to wash instruments. Dr. Halsted solved the problem by contracting the Goodyear Rubber Company to make Caroline several pairs of thin rubber gloves to protect her hands. This marked the beginning of the use of rubber gloves in the operating room in this country.

Caroline Hampton and Dr. Halsted were both of distinguished family backgrounds, though to some degree mutually exclusive in terms of marriage. She was a product of the southern planter aristocracy, whereas he came from the northern merchant class. However, in this instance, any incongruities in family background failed to deter the acquaintance of the two. In fact, it was but the spring of 1890 that Caroline resigned from her nursing duties shortly before the announcement of her engagement to Dr. Halsted. Drs. Osler and Welch, respectively, gave honorary dinners for the two who subsequently married in Columbia on June 4, 1890. Dr. and Mrs. Halsted honeymooned here in Cashiers Valley, and this marked the commencement of what has been described as a "great mutual devotion" between husband and wife.

Little is recorded about Caroline's married life except in conjunction with her husband's illustrious career. Dr. Halsted did buy the Hampton home in Cashiers in the 1890s, and it was he who named the retreat High Hampton. While

Dr. Halsted spent the majority of his time at Johns Hopkins and traveling, his wife spent progressively more time at High Hampton each year. As a result, she played a major role in overseeing the crops and gardens. It remains questioned whether Dr. or Mrs. Halsted was responsible for the beautiful dahlias that graced their countryside. In the literature, Dr. Halsted receives major credit; however, rumors from Columbia would have us believe otherwise. In any event, each fall Caroline posted a notice at the local post office declaring their dahlias a gift to all the people of the community.

In their time, Caroline's aunts took a great deal of interest in community folks around High Hampton and contributed to the building of a local church and school. Caroline continued to serve in this charitable capacity, attending to community needs and occasionally paying the way for a mountain neighbor in need of the services of the Johns Hopkins Hospital. In his visits to High Hampton, Dr. Halsted helped to meet the medical and veterinary needs of the area. Incidentally, he was also known to have repaired fistulas in prize race horses at the Hampton stables in Columbia.

Mrs. Halsted was also known to have been quite mechanically inclined, creating various gadgets for her mountain retreat and encouraging her visiting nephews in such directions of handiwork. Her nephews also relate that the Halsteds kept a number of dogs around High Hampton in keeping with their fondness for animals. The most remembered of these were two favorites, a pair of dachshunds named Nip and Tuck.

Caroline Hampton Halsted never bore any children though certainly she led a very fulfilling life. She side-stepped the cushion of her aristocratic background to pursue a nursing career, only to marry the gentleman who proved to be the Father of American Surgery. Her life centered around the things she loved — primarily her husband, her animals and Cashiers Valley. When these valuables were no longer within reach, she died on November 27, 1922, at age 61, surviving Dr. Halsted by less than three months.

Possibly of interest to the present company is an updated note on the High Hampton lands and the Hampton family. Whereas the original Hampton property in Cashiers totalled approximately 750 acres, Dr. Halsted expanded the holdings during his lifetime to 2,200 acres. In 1922, the property was purchased from the Halsted estate by the father of the present owner, Mr. McKee. To this date the lands remain intact and, fortunately, wonderfully maintained by the McKee family.

The Hampton family today is still largely centered in Columbia. The remaining columns of the original Hampton mansion at Millwood still stand steadfastly. Frank Hampton, Caroline's nephew, now lives in the house built just a little way behind the columns. On a visitor's lucky day, he might display his beautiful wooden bed, the same as that occupied by Dr. Halsted during his years at High Hampton. On any given day, however, he offers a wealth of personal reminiscence about the Hampton family and the

Halsteds. And with a shot of bourbon at his 83 years, he can still better the efforts of the best of us with his colorful stories.

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The mind, therefore, though the subject it contemplates is entirely at rest, exerts a great modifying power over the knowledge it gains from without: for when we contemplate the mass of snow, we may either consider it simply as a collection of white particles: or we may go further, and regard these, as composed of other particles; these again of other components.* At each step the body is considered as composed of a series of groups, each group being regarded as an individual, though its component parts are numerous, and have each very different qualities. The same is true in anatomy. The whole system, composed of a variety of different substances may be regarded as a whole; or may be analysed into bone, muscle, nerve, tendon, blood vessel, &c.: each of these may be considered as also composed of particular aggregates of matter; as the muscles are formed of fibers of a peculiar kind, of nerves and of blood-vessels; these fibres, nerves, and blood-vessels are composed of other aggregates, till separating aggregate from aggregate, we arrive at the ultimate result of which the science is capable. At each step, however, there are the same number of particles combined in the whole or in each group, but by the mind, they are differently viewed and assembled into masses. This disposition to analyze and separate bodies from each other, enlarges the range of our power, and it is by thus parting the groups of natural bodies from each other, that the power and effect, of each, is appreciated, and our knowledge increased. It is, however, only an act of the mind, for the snow and the body are the same, whether considered as a mass, or as an assemblage of organs, or of particles composed of various ultimate atoms. It is one great principle of science, thus continually to oppose and counteract this disposition of the mind, to mass into groups, and to take too partial, or too general views of the various subjects of nature, and thus to discover by analysis, her various combinations; chemistry in the decomposition of bodies — anatomy in the separation of the different parts of the human body, by the knife, consists in this simple process: the same mode of investigation applies to the phenomena of disease, both in understanding their nature, and in curing them.

* Brown's Lectures on the Human Mind.

† Ibid.

—*Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Calhoun, M.D. Vol. 1, Philadelphia, Towar & Hogan, 1829.

Toxic Encounters of the Dangerous Kind

JELLY BEANS FOR THE MIDDLE CLASS — BENZODIAZEPINES

In a recent popular movie the protagonist undergoes an acute anxiety attack in a busy urban department store. He is immediately surrounded by a crowd. Our hero asks if anyone in the group has a Valium® — almost everyone in the crowd responds positively. This is an apocryphal event, done in the best hyperbolic Hollywood style, but not far from the mark. In this age of anxiety, the benzodiazepines, especially Valium®, have become the jelly beans of the Middle Class. In 1979, according to the Drug Enforcement Administration, Valium® headed the list of most abused drugs; 2.3 billion tablets were distributed that year. In 1980, Valium® was the most common drug prescribed in America; 33 million prescriptions. In 1981, it was the 4th most commonly prescribed (cimetidine, propanol and ibuprofen were 1, 2 and 3). With cimetidine number one, there must be a message there somewhere. Has Valium® failed to assuage the “stress” with “ulcers” the result? What will historians of the future think of us when they see how we attempted to combat reality?

The benzodiazepines were originally developed as centrally acting muscle relaxants. This class of drugs has a varied spectrum but have effects such as sedation, hypnosis, decreasing anxiety, muscle relaxation and anticonvulsant activity. The major drugs in this class are used primarily as therapy for anxiety. The common drugs in this class are listed below:

- chlordiazepoxide — (Librium®) —
anti-anxiety
- clorazepate — (Tranxene®) —
anti-anxiety
- clonazepam — (Clonipin®) —
anti-convulsant
- diazepam — (Valium®) —
anti-anxiety, anti-convulsant
- flurazepam — (Dalmane®) —
hypnotic
- lorazepam — (Ativan®) —
anti-anxiety

- oxazepam — (Serax®) —
anti-anxiety
- prazepam — (Verstran®) —
anti-anxiety
- temazepam — (Cerepax®) —
anti-anxiety

The most popular members of the benzodiazepine family are probably diazepam, chlordiazepoxide, and flurazepam. These drugs exhibit a high degree of protein binding (85%-95%), are metabolized by the liver and are not excreted unchanged in the liver. Most of the benzodiazepine derivatives, except oxazepam (Serax®), have relatively long half lives — 30-50 hours. They probably act by depressing activity in the reticular and limbic systems of the brain.

High doses of benzodiazepines typically can lead to marked fatigue and a feeling of detachment, like sleep-walking, but high doses can also cause headache, dizziness, ataxia, confusion, and disorientation. In some cases benzodiazepines used in patients with anxiety can cause remarkable hostility especially in women with small children.

Overdose is quite common as would be expected from their availability. Probably the only good news associated with benzodiazepines in terms of toxicology is that death is quite rare in overdose. It is often stated by people dealing with drug overdose that the only way one can die from too much benzodiazepine is to get hit by a truck carrying these medications. The lethal overdoses are not well-documented but it has been suggested that for diazepam or chlordiazepoxide it may be in the range of 700-750 mg for adults. *Overdose* initially produces minor extrapyramidal signs, some excitement, dry mouth, tachycardia, dilated pupils and absent bowel sounds — anticholinergic effects. The course then proceeds to sleepiness and Grade 0 coma (patient asleep but is arousable and can answer questions) or Grade I coma (patient is in coma, but withdraws from pain and has intact reflexes). Deep coma is not common at all. In fact, it is so uncommon that when presented with a patient in deep coma who allegedly overdosed on benzodiazepines

and has also marked hypotension or cardiovascular collapse, one should suspect ingestion of another CNS depressant as well. Please note that benzodiazepines markedly potentiate the effects of ethanol. The typical overdosed patient on benzodiazepines alone falls asleep but is rousable and awakens after 24-48 hours even with high blood levels. Toxic doses for adults are probably in the range of 0.5 to 1.5 g.

Treatment for overdose is fairly standard, but with a few admonitions. The stomach should be emptied in the safest manner — emesis or lavage — followed by activated charcoal and a cathartic such as magnesium sulfate. Standard respiratory care is offered if needed. Because of marked protein binding, dialysis is not advised. In massive doses with Class III or IV coma, charcoal hemoperfusion can be tried. In spite of a few suggestions in the literature, neither physostigmine nor naloxone is advised by those who have had vast experience with benzodiazepine overdose.

Illicit “street” Valium® is quite popular. Most drugs in this class are absorbed slowly following oral administration except for Valium® which is absorbed rapidly orally and produces a euphoria which accounts for its popularity on the street. To the unwary “street buyer” a new problem has arisen: recent reports tell of patients entering emergency rooms with acute dystonia after allegedly ingesting Valium® tablets bought illicitly. What they have taken is usually haloperidol (Haldol®), tablets which are similar in size, shape, and color (blue). Not for me, thank you, I will continue to ruin my teeth and my beautiful body with *real jelly beans*.

Ronald B. Mack, M.D.
Associate Professor of Pediatrics
Bowman Gray School of Medicine
and Chairman, Committee on
Accidents and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics

MOSES BEN MAIMON (MAIMONIDES) [1135-1204]

There are other foods which are [also] detrimental but not as much as the [aforementioned ones]. They are water fowl, small young pigeons, dates, bread toasted in oil or bread that was kneaded with oil, fine meal that was completely sifted so that not a trace of bran remains, gravy, and brine [of salted fish]. One should not consume these foods excessively. A person that is wise and can control his inclinations and does not yield to his appetite, and does not eat any of the aforementioned [detrimental foods] unless he needs them as a medicine, is indeed a strong man.

Mishneh Torah, “Hilchoth De’oth,” Ch. IV, No. 10 (tr. by Fred Rosner in *Annals of Internal Medicine* 62:372, 1965)

Editorials

SUGGESTIONS FOR AUTHORS

The NORTH CAROLINA MEDICAL JOURNAL welcomes the contribution of original articles — scientific, historic, and editorial — provided that they have neither been published previously nor have they been simultaneously submitted for publication in other medical periodicals. Papers concerned with all aspects of the practice of medicine in North Carolina are particularly solicited.

In addition, in view of "The Copyright Revision Act of 1976," letters of transmission to the editor should contain the following language: "In consideration of the North Carolina Medical Society's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns, or otherwise conveys all copyright ownership to the North Carolina Medical Society in the event that such work is published in the NORTH CAROLINA MEDICAL JOURNAL." We regret that transmittal letters not containing the foregoing language signed by "all" authors of the submission will necessitate delay in review of the manuscript.

The NORTH CAROLINA MEDICAL JOURNAL accepts manuscripts prepared and submitted in accordance with uniform requirements defined by the International Steering Committee of Medical Editors as described below.

Preparation of manuscript

Type manuscripts on 20.3 x 26.7 cm or 21.6 x 27.9 cm (8 x 10½ in or 8½ x 11 in) or ISO A4 (212 x 297 mm) white bond paper with margins of at least 2.5 cm (1 in). Use double spacing throughout, including title page, abstract, text, acknowledgments, references, tables, and legends for illustrations. Submit three copies of the complete manuscript and three sets of glossy prints of all figures. Begin each of the following sections on separate pages: title page, abstract and key words, text, acknowledgments, references, individual tables, and legends. Number pages consecutively, beginning with the title page. Type the page number in the upper right-hand corner of each page.

Manuscripts are reviewed for possible publication with the understanding that they are being submitted to one journal at a time and have not been published, simultaneously submitted, or already accepted for publication elsewhere. This does not preclude consideration of a manuscript that has been rejected by another journal or of a complete report that follows publication of preliminary findings elsewhere, usually in the form of an abstract. Copies of any possible duplicative published material should be submitted

together with the manuscript that is being sent for consideration.

TITLE PAGE

The title page should contain: (1) the title of the article, which should be concise but informative; (2) a short running head or footline of no more than 40 characters (count letters and spaces) placed at the foot of the title page and identified; (3) first name, middle initial, and last name of each author, with highest academic degree(s); (4) name of department(s) and institution(s) to which the work should be attributed; (5) disclaimers, if any; (6) name and address of author responsible for correspondence about the manuscript; (7) name and address of author to whom requests for reprints should be addressed, or statement that reprints will not be available from the author; (8) the source(s) of support in the form of grants, equipment, or drugs.

ABSTRACT AND KEY WORDS

The second page should carry an abstract of not more than 150 words. State the purposes of the study or investigation, basic procedures (study subjects or experimental animals and observational and analytical methods), main findings (give specific data and their statistical significance, if possible), and the principal conclusions. Emphasize new and important aspects of the study or observations. Use only approved abbreviations (see Appendix for commonly used abbreviations).

Key (indexing) terms—Below the abstract provide and identify as such three to 10 key words or short phrases that will assist indexers in cross-indexing your article and that may be published with the abstract. Use terms from the Medical Subject Headings list from *Index Medicus* whenever possible.

TEXT

The text of observational and experimental articles is usually, but not necessarily, divided into sections with the headings Introduction, Methods, Results, and Discussion. Long articles may need subheadings within some sections to clarify their content, especially the Results and Discussion sections. Other types of articles need not conform to this format, and authors should consult individual journals for further guidance.

Introduction—State clearly the purpose of the article. Summarize the rationale for the study or observation. Give only strictly pertinent references and do not review the subject extensively.

Methods—Describe your selection of the observa-

tional or experimental subjects (patients or experimental animals, including controls) clearly. Identify the methods, apparatus (manufacturer's name and address within parentheses), and procedures used in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods; provide references and brief descriptions of methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate their limitations. When reporting experiments on human or animal subjects, indicate whether the procedures followed were in accord with the ethical standards of the committee of human experimentation of the institution in which the experiments were done or in accordance with the Helsinki Declaration of 1975. Identify precisely all drugs and chemicals used, including generic name(s), dosage(s), and route(s) of administration. Do not use patients' names, initials, or hospital numbers. Include numbers of observations and their statistical significance when appropriate. Detailed statistical analyses, mathematical derivations, and the like may sometimes be suitably presented in the form of one or more appendices.

Results—Present your results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables or illustrations, or both; emphasize or summarize only important observations.

Discussion—Emphasize the new and important aspects of the study and conclusions that follow from them. Do not repeat data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies. Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such.

ACKNOWLEDGMENTS

Acknowledge only persons who have made substantive contributions to the study. Authors are responsible for obtaining written permission to do so because such an acknowledgment may imply endorsement of the data and conclusions.

REFERENCES

Number references consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by arabic numerals (within parentheses). References cited only in tables or in legends to figures should be numbered in accordance with a sequence established by the first identification in the text of the particular table or illustration.

Use the form of references adopted by the United States National Library of Medicine and used in *Index Medicus*. For references not included in *Index Medi-*

cus use the style of the examples cited subsequently; these adhere to the abbreviated form of references established by the American National (ANSI) Standard for Bibliographic References and have been approved by the National Library of Medicine.

The names of journals should be abbreviated according to the style used by *Index Medicus*; consult the "List of Journals Indexed," which is printed each year in the January issue of *Index Medicus*.

Try to avoid the use of abstracts as references; "unpublished observations" and "personal (written, not verbal) communications" may not be used as references, although references to them may be inserted (within parentheses) in the text. Include manuscripts accepted but not yet published among the references as in press; designate the journal followed by "in press" (within parentheses). Cite manuscripts submitted but not yet accepted in the text as "unpublished observations" (within parentheses).

The references must be verified against the original documents. Examples of correct forms of references are given below.

Journal

- (1) *Standard journal article*—(List all authors when six or less; when seven or more, list only first three.)

Solter NA, Wasserman SI, Austen, KF: Cold urticaria: Release into the circulation of histamine and eosinophilic chemotactic factor of anaphylaxis during cold challenge. *N Engl J Med* 1976; 294: 687-90.

- (2) *Corporate author*

The Committee on Enzymes of the Scandinavian Society for Clinical Chemistry and Clinical Psychology. Recommended method for the determination of gamma-glutamyltransferase in blood. *Scand J Clin Lab Invest* 1976; 36: 119-25.

Anonymous. Epidemiology for primary health care. *Int J Epidemiol* 1976; 5: 224.

Books and other monographs

- (3) *Personal author(s)*

Osler AG: Complement: mechanisms and functions. Englewood Cliffs: Prentice-Hall, 1976.

- (4) *Corporate author*

American Medical Association Department of Drugs. AMA drug evaluations. 3rd ed. Littleton Publishing Sciences Group, 1977.

- (5) *Editor, compiler, chairman as author*

Rhodes AJ, Van Rooyen CE, comps. Textbook of virology: for students and practitioners of medicine and other health sciences. 5th ed. Baltimore: Williams & Wilkins, 1968.

- (6) *Chapter in book*

Weinstein L, Swartz, MN: Pathogenetic properties of invading microorganisms. pp. 457-72. In: Sodeman WA Jr, Sodeman WA, eds.

Pathologic physiology: mechanisms of disease. Philadelphia: WB Saunders, 1974.

(7) *Agency publication*

National Center for Health Statistics. Acute conditions, incidence and associated disability. United States July 1968-June 1969, Series 10, No 69, 1972, DHEW Pub No (HSM) 72-1036.

(8) *Newspaper article*

Shaffer RA: Advances in chemistry are starting to unlock mysteries of the brain: Discoveries could help cure alcoholism and insomnia, explain mental illness. The Wall Street Journal 1977 Aug 12: 1 (col. 1), 10 (col. 1).

(9) *Magazine article*

Roneché B: Annals of medicine: The Santa Claus culture. The New Yorker 1971 Sept 4: 66-81.

TABLES

Type each table on a separate sheet; remember to double-space. Do not submit tables as photographs. Number tables consecutively and supply a brief title for each. Give each column a short or abbreviated heading. Place explanatory matter in footnotes, not in the heading. Explain in footnotes all non-standard abbreviations that are used in each table. For footnotes, use the following symbols in order: *, †, ‡, §, ¶, ||, **, ††, etc. Identify statistical measures of variations such as SD and SEM.

Omit internal horizontal and vertical rules.

Cite each table in the text in consecutive order.

If you use data from another published or unpublished source, obtain permission and acknowledge fully.

A number of tables that is excessive in relation to the length of the text may produce difficulties in the layout of pages. Examine issues of the journal to which you plan to submit your paper to estimate how many tables may be used per 1000 words of text.

On recommendation of the editor after acceptance of a manuscript, additional tables containing important backup data too extensive to be published may be deposited with the National Auxiliary Publications Service or made available by the author(s). In that event an appropriate statement will be added to the text. Submit such tables for consideration with the manuscript.

ILLUSTRATIONS

Submit three complete sets of figures. Figures should be professionally drawn and photographed; freehand or typewritten lettering is unacceptable. Instead of original drawings, roentgenograms, and other material, send sharp, glossy black and white photographic prints no larger than 20.3 x 25.4 cm (8 x 10 in). Letters, numbers, and symbols should be clear and even throughout, and of sufficient size that when reduced for publication each item will still be legible. Titles and detailed explanations belong in the legends for illustrations, not in the illustrations themselves.

Each figure should have a label pasted on its back indicating the number of the figure, the names of the authors, and the top of the figure. Do not write on the back of the figures or mount them on cardboard, or scratch or mar them using paper clips. Do not bend figures.

Photomicrographs must have internal scale markers. Symbols, arrows, or letters used in the photomicrographs should contrast with the background.

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Type legends for illustrations double-space on a separate page with arabic numerals corresponding to the illustrations. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain internal scale and identify method of staining in photomicrographs.

Abbreviations

Use only standard abbreviations (see Appendix). Consult the *Council of Biology Editors Style Manual* (4th edition) and the *ELSE Manual* for lists of additional standard abbreviations. Avoid abbreviations in the title. The full term for which an abbreviation stands should precede its first use in the text unless it is a standard unit of measurement.

In many countries the International System of Units (SI) is standard or is becoming so. Report measurements in the units in which they were made. Journals may use these units, convert them to another system, or use both.

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Mail manuscripts in a heavy paper envelope, enclosing the manuscript and figures in cardboard, if necessary, to prevent bending of photographs during mail handling. Place photographs and transparencies in heavy paper envelopes.

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Appendix
COMMONLY USED APPROVED ABBREVIATIONS

TABLE 1—Standard units of measurements and statistical terms	
Term	Abbreviation or symbol
<i>Standard unity of measurement</i>	
ampere	A
Angstrom	Å
barn	b
candela	cd
coulomb	C
counts per minute	cpm or counts/min
counts per second	cps or counts/sec
curie	Ci
degree Celsius	°C
disintegrations per minute	dpm or dis/min
disintegrations per second	dps or dis/sec
electron Volt	eV
equivalent	Eq
farad	F
gauss	G
gram	g
henry	H
hertz	Hz
hour	h or hr
international unit	IU
joule	J
kelvin	K
kilogram	kg
liter, litre	l
meter, metre	m
minute	min
molar	M
mole	mol
newton	N
normal (concentration)	N
ohm	Ω
osmol	osmol
pascal	Pa
revolutions per minute	rpm or r/min
second	s
square centimeter	cm ²
volt	V
watts	W
week	wk
year	yr
<i>Statistical terms</i>	
correlation coefficient	r
degrees of freedom	df
mean	\bar{x}
not significant	NS
number of observations	n

probability	p
standard deviation	SD
standard error of the mean	SEM
"Student's" t test	t test
variance ratio	F

TABLE II—Combining factors			
Name and factor	Symbol	Name and factor	Symbol
tera- (10 ¹²)	T	centi- (10 ⁻²)	c
giga- (10 ⁹)	G	milli- (10 ⁻³)	m
mega- (10 ⁶)	M	micro- (10 ⁻⁶)	μ
kilo- (10 ³)	k	nano- (10 ⁻⁹)	n
hecto- (10 ²)	h	pico- (10 ⁻¹²)	p
deca- (10 ¹)	da	femto- (10 ⁻¹⁵)	f
deci- (10 ⁻¹)	d	atto- (10 ⁻¹⁸)	a

TABLE III—Other common abbreviations	
Term	Abbreviation or symbol
adenosinediphosphatase	ADPase
adenosine 5'-diphosphate (adenosine diphosphate)	ADP
adenosine 5'-monophosphate (adenosine monophosphate, adenylic acid)	AMP
adenosine triphosphatase	ATPase
adenosine 5'-triphosphate (adenosine triphosphate)	ATP
adrenocorticotrophic hormone (adrenocorticotropin)	ACTH
bacillus Calmette-Guerin	BCG
body temperature, pressure, and saturated	BTPS
basal metabolic rate	BMR
central nervous system	CNS
coenzyme A	coA
deoxyribonucleic acid (deoxyribonucleate)	DNA
dihydroxyphenethylamine	dopamine
electrocardiogram	ECG
electroencephalogram	EEG
enteric cytopathogenic human orphan (virus)	ECHO
ethyl	Et
ethylenediaminetetraacetate	EDTA
gas-liquid chromatography	GLC
guanosine 5'-monophosphate (guanosine monophosphate, guanylic acid)	GMP
haemoglobin	Hb
logarithm (to base 10; common logarithm)	log
lgarithm, natural	ln
methyl	Me
Michaelis constant	Km
negative logarithm of hydrogen ion activity	pH
partial pressure of CO ₂	PCO ₂
partial pressure of O ₂	PO ₂
per	/
per cent	%
radiation (ionising, absorbed dose)	rad
respiratory quotient	RQ
specific gravity	sp gr
standard atmosphere	atm
standard temperature and pressure	STP
ultraviolet	uv
volume	vol
volume ratio (volume per volume)	vol/vol
weight	wt
weight per volume	wt/vol
weight ratio (weight per weight)	wt/wt

THE EDIFICE OF PAIN

Even more difficult than the analysis of pain is the relieving of the suffering it brings. This difficulty probably reflects not only a complex etiology but also the inability of patients to describe symptoms adequately and their physicians to imagine their patients' predicaments. Pain may be physical, psychological or spiritual or a mixture of these so that treatment often cannot be expected to cure or to prevent the complaint from becoming chronic.

Look only at the words we use to describe the sensations associated with or represented as pain: travail, despair, anxiety, fear and trembling, suffering, emptiness, agony, *Angst*, dread, even "the sickness unto death." When faced then with chronic pain, the physician may feel dread and the emptiness of therapeutic frustration as the same names of patients with the same complaints appear again and again in the appointment book. What to do? Because something must be done if our obligations to our patients are to be met and some relief provided.¹

People with chronic pain become difficult patients, often alienated by rejection or loss of hope, and sometimes alienate their physicians in the process as symptoms seem to become fixations. Many can certainly be helped, at least temporarily by the new, the placebo effect, but false hopes, too often unfulfilled, can lead to cynicism, depression and negativism. Hence the need for developing more systematic and comprehensive programs to help sufferers and to increase our own understanding of victims and of how they can best be treated.

Ghia and Sugioka (p 493) have described some of the administrative problems involved in trying to set up such services in an academic environment, but they don't really tell us enough of what we need to know. Do they, for example, understand that the physician sometimes must play a priestly part, act in a sacerdotal role as well as in a scientific one? Faith and acceptance are after all imperative if satisfactory defenses are to replace those overwhelmed by chronic frustration and failed communication. The natural tendency for much pain is to improve, although it may take a year or so for an ailing back to become less assertive and require daily rituals, such as wearing braces and taking regular exercises, to appease an angry process.

Do ministers participate in their clinic? What is the role of Hospice in such a project? Many patients with chronic pain are in that state because of malignant disease and need spiritual as well as physical support. Reconstructing one's body image when all forces seem antagonistic can seldom be done alone and stoicism is not popular in the United States. Perhaps we have been led to expect too simple and prompt remedies for chronic pain because acute pain can so often be handled expertly and effectively.

The anesthesiologist, because his appointed role in medicine is to relieve some of the suffering of surgery, is naturally looked to for help.² Knowledge of anesthetic agents is necessary, of course, as McLeskey reaffirms in his review of local anesthetics

(p 513), but anesthesiologists need more help in their quest, as Ghia and Sugioka make clear. The house of pain is an edifice of mystery in which no one wants to live. It is dark, quiet and isolated to the detriment of its residents and to the distress of their physicians.

J.H.F.

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THOUGHTS ABOUT THE MEDICAL INTERVIEW

In a world of health care delivery, mass screening, annual executive examinations and of the invasion of hospitals by the private sector, the diagnostician may well feel that he is over the hill. The commercial organization of medicine seems to leave little for the artist who as a medical private detective finds himself all too often today overwhelmed by the clues provided by the organization.

Why then be concerned about the interview when we can measure so much and verify results so easily? Is it perhaps because patients feel more comfortable listening to a trusted human voice than reading a printout or being told at a neighborhood health screening party to see a doctor? Even in hospitals with so many health care professionals about, patients seem frustrated by technology and report that their physicians often seem more like travel agents than healers, arranging tours in a strange land.

The physician as white-coated high priest in the cathedral of medicine, the hospital, is often frustrated himself. Called on to play as many roles as an actor in a stock company on much shorter notice, he* often misses his cues and fails to reach his audience. That expectant audience, certain on admission that the chair of the diagnostic and therapeutic committee is really in charge, often leaves the hospital little better off and less confident of his doctor. Facts have increased but understanding has often diminished, aggravating anxiety and stimulating more cocktail party conversation about the shortcomings of modern medicine.

One of the medical thespian's major roles is that of educator, to let the patient and the family know what their problems are and what is to be done, to answer questions that can be answered and to explain why others cannot be. This takes time, a scarce commodity in our instantaneous society, and an ability to sense moods and understand a patient's body language. Many an interview is lost and many a patient and doctor perplexed because they have failed to read each other's cues.

Despite the marvels of today's technology, the interview is still critical, particularly at the patient's first visit when giant steps toward mutual trust can be

*The English language, supple as it is, lacks a bisexual pronoun, particularly needed today when 30% of our medical students are women.

taken. The situation is more difficult in teaching hospitals where stampedes of house officers and students compete with staff physicians and the organization for the patient's time. But the difficulty is not insurmountable. A few minutes in private can be tremendously effective. Even in a two-bed unit or crowded ward, privacy can be established by pulling a curtain. Neighbors will eavesdrop in the open but a simple cotton barrier is surprisingly well respected. The sufferer can then talk, interrupted only when necessary, as leisurely as possible. Sitting at the foot of the bed or in a chair beside it, eye to eye with the patient, can be of great help in establishing trust and in getting a good history.

Some patients will feel they must satisfy rather than inform their physicians so probing must be delicate because some will not tell or will deny if pushed too

hard or too fast. Many in the beginning desire their doctor's respect so intensely that they leave important items out of their story, often avoiding the main problem altogether. If moral judgment on the physician's part seems implied, recovering the interview is even more difficult. Yet an orderly or a maid may get the whole story in a few sentences a few minutes later.

Opinions expressed prematurely by the busy doctor can also discourage patients: explanations may be overly explicit. Some patients do have to be led gently so that they can retain or regain their sense of mastery of their destinies. Yet there is a time to confront lest wishful thinking triumph. Being superficial with a clinging patient can be dangerous. Some of the sick need to know the behavior and dimensions of the foe they face. For them it is not fun to be fooled. It may not be fun to know but it may be better. J.H.F.

MOSES BEN MAIMON (MAIMONIDES) [1135-1204]

In the warm [summer] months, one should eat cooling foods, not use seasoning to excess, and consume vinegar. In the rainy [winter] months, one should eat warming foods, abundantly spice [the food]. . . . In this manner should one prepare [food] in cold climates and warm climates, [that is] in each and every place that which is best suited thereto.

Mishneh Torah, "Hilchoth De'oth," Ch. IV, No. 8 (tr. by Fred Rosner in *Annals of Internal Medicine* 62:372, 1965)

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In the Public Health

Perinatal Regionalization In North Carolina, 1967-1979: Services, Programs, Referral Patterns, and Perinatal Mortality Rate Declines for Very Low Birthweight Infants

Richard R. Nugent, M.D., M.P.H.

(Note: *In the Public Health* is a new feature provided by the North Carolina Department of Human Resources' Division of Health Services. This column will run four times a year, in January, April, July, and October. —A.A.H.)

SUMMARY: As early as 1967, North Carolina's medical centers began to develop perinatal intensive care services. In 1974, these developments were assisted by public commitment through the Regionalized Perinatal Care Program, established by the N.C. General Assembly. Since that time, infants with birthweights under 1501 grams are being increasingly delivered in and referred to Level III Centers. Sharp increases in tertiary referral are associated with declines in very low birthweight perinatal mortality, especially at the Level III Centers.

INTRODUCTION

Medical care for pregnant women and infants up to 28 days of life (perinatal care) has made great strides during the last three decades. The 50's and 60's saw the development in research centers of new technologies including electronic fetal monitoring, amniocentesis, ultrasound for pregnant women, cardiorespiratory monitoring, and mechanical ventilatory assistance for newborns.¹ These capabilities grew out of rapid advances in perinatal medical knowledge which also created the medical subspecialties of Maternal/Fetal Medicine and Neonatology. Most of these technological advances occurred in intensive treatment for patients with serious medical illnesses. Efforts to provide these treatments became organized into neonatal and maternal intensive care units in the late 1960s.

At the same time, it became apparent that perinatal intensive care was exceedingly expensive and was appropriate only for a small number of sick patients or extremely premature newborns. To meet the challenges of supporting costs while embracing cost containment principles and assuring access to this care by all in need, several important groups of professionals were gathered to guide these developments. At the national level, the *National Foundation — March of*

Dimes brought together the Committee on Perinatal Health. At the state level in 1972, North Carolina's Governor Bob Scott appointed the Task Force on Maternal and Infant Health. Both groups recommended regionalization of perinatal care through application of the following principles:^{2,3}

1. Development of hospital services at three levels of care —
Level I — Care of normal patients and those with a few immediate complications
Level II — Care of the majority of patients with complications
Level III — Intensive care of those with serious illnesses or extreme prematurity
2. Medical screening of all perinatal patients and referral of those with complications to sources of special care at Level II and Level III Centers
3. Establishment of linkages among these services for consultation, referral, and transport
4. Education of perinatal professionals and coordination of community support to bring about these changes

The Task Force recognized that public funds would be necessary to cover the cost of high risk hospital and ambulatory care for indigent patients with complications, for professional education, and for transport.

The following article examines the intervention developed as a result of these recommendations and the

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changes in perinatal mortality rates in North Carolina during the 13-year period 1967 through 1979.

The Development of Intensive Care Services in North Carolina, 1967 to 1979

In 1967, Duke University Medical Center (in Durham) established the first neonatal intensive care unit in North Carolina. Charlotte Memorial Hospital (Charlotte) followed in 1968. Then, between 1972 and 1974, units were begun at North Carolina Memorial Hospital (Chapel Hill), North Carolina Baptist and Forsyth Memorial Hospitals (Winston-Salem), Moses Cone Hospital (Greensboro), and Wake Medical Center (Raleigh). Development of these units was assisted to some extent through the Premature Care Program, a Title V Federal program. Soon to develop, with the assistance of a new state Regionalized Perinatal Care Program (RPC), were intensive care units at New Hanover Memorial Hospital (Wilmington), Pitt Memorial Hospital (Greenville), and Memorial Mission Hospital (Asheville). By 1979 these hospitals performed nearly 1,500 deliveries a year or more, had fulltime subspecialty trained neonatologists, had fulltime teaching obstetricians, and had house staff physicians at residency level providing 24-hour care. The four medical schools and Charlotte Memorial Hospital had subspecialists in Maternal/Fetal Medicine.

Public Commitment to Perinatal Regionalization

Responding to the recommendations of the Task Force on Maternal and Infant Health, the North Carolina General Assembly passed House Bill 1240 in March 1974 with an appropriation of \$500,000. It established the Regionalized Perinatal Care (RPC) Program to implement the principles listed above in a voluntary, cooperative fashion and to reduce perinatal mortality and long term perinatal morbidity in North Carolina. A statewide Perinatal Council was appointed to advise the Secretary of the Department of Human Resources, and a staff was appointed in the Division of Health Services. A pilot project was designed and initiated in southeastern North Carolina. The pilot project would operate on the principle that a multidisciplinary team of professionals in high risk clinics would improve care for medically complicated indigent pregnant women and would attract referrals of indigent high risk babies *in utero* to Level II and III centers.

The Development of the RPC Program 1974-1979

The pilot project was begun, and a careful plan for its evaluation was established. The pilot project evaluation and results are to be discussed elsewhere. The Council and staff considered a statewide approach. North Carolina was divided into six perinatal regions for planning and educational purposes, with six corresponding regional committees. Each committee reviewed its communities by site visit, using a survey developed from Task Force recommenda-

tions. By December 1979 all regions submitted plans that were acceptable to the statewide Perinatal Council.

The program's funding grew from approximately \$700,000 in FY 1973-74 to \$4.3 million in FY 1978-79. In 1979, approximately 50% percent of the funding, \$2.1 million, was used to reimburse Level III hospitals for intensive care of the sick perinatal patient; \$800,000 was allocated to support the pilot project. The remainder, \$1.4 million, was committed to improvements in: equipment and staffing of Level III centers, professional education, and the development of high risk clinics.

Changes in Referral Patterns in North Carolina During the 70's

While many high risk conditions could be used as markers to assess referral patterns, the most precise, most available, and most associated with outcome is low birthweight. For this article, we have selected birthweight under 1501 grams, very low birthweight (VLBW), as a strong indicator that those infants should have been delivered in or referred to a Level III center. Figure 1 presents the non-federal hospital occurrence of VLBW deliveries by level of hospital in North Carolina. In the five-year period, 1969-1973, 25.7% of deliveries under 1501 grams birthweight were born in non-federal Level III hospitals. By annual 1979 that proportion had risen to 46.8%. Concomitantly, VLBW deliveries at Level I non-federal hospitals had declined from 32.6% in 1969-73 to 17.2% in 1979, while Level II VLBW deliveries declined from 41.7% to 36.0%. This data suggests that North Carolina physicians recognized and responded to the need to refer high risk women to centers with intensive care capability.

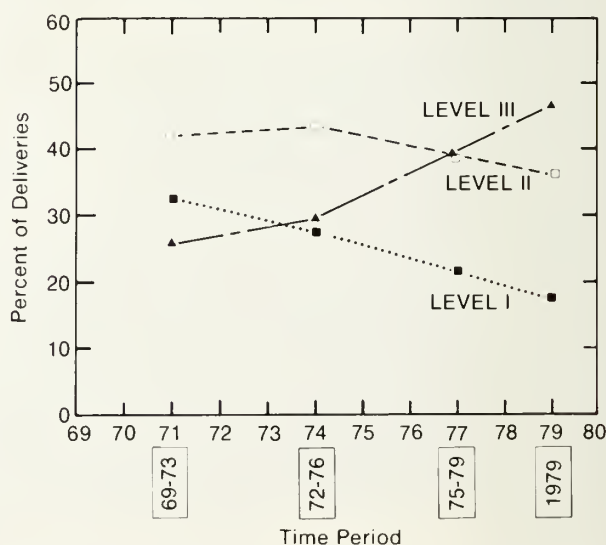


Figure 1. Changes in percent of deliveries under 1501 grams that occurred in non-federal hospitals by hospital group, North Carolina, 1969-73, 1972-76, 1975-79 and 1979.

Changes in Perinatal Mortality Rate for VLBW Babies in North Carolina During the 70's

Figure 2 shows annual perinatal mortality rates for VLBW babies from 1967 to 1979. There was a steady decline in VLBW perinatal mortality with the sharpest change occurring between the years of 1974 and 1975. The general shape of the curve suggests a more level rate until 1972 followed by more rapid declines in 1975 and 1978.

Figure 3 shows the changes in five-year and annual VLBW perinatal mortality rates by level of hospital in North Carolina for non-federal hospitals. Time periods are 1969-73, 1972-76, 1975-79, and the single year of 1979. Level III hospitals, which received the largest proportion of RPC funding and in which technology advanced most rapidly, are showing the most rapid decline in mortality. Level I hospitals, which received very little direct program aid, but which referred pregnant women in premature labor most vigorously, are showing the next largest rate of decline in mortality. Please note that the outcome of an infant who was born at Level I and was referred to Level III for care was counted in the Level I hospital's mortality statistic. Thus, at least part of the observed decline for these hospitals is explainable by newborn referral as well as predelivery referral. One feature of this data is that Level II centers show less tendency to refer, show more gradual declines in these statistics, and have higher mortality rates than either of the other two hospital groups.*

*Level II hospitals were defined by three criteria: 1. at least 2 certified obstetricians, 2. at least 2 certified pediatricians, and 3. at least 500 deliveries as reported in hospital recense surveys for 1979.

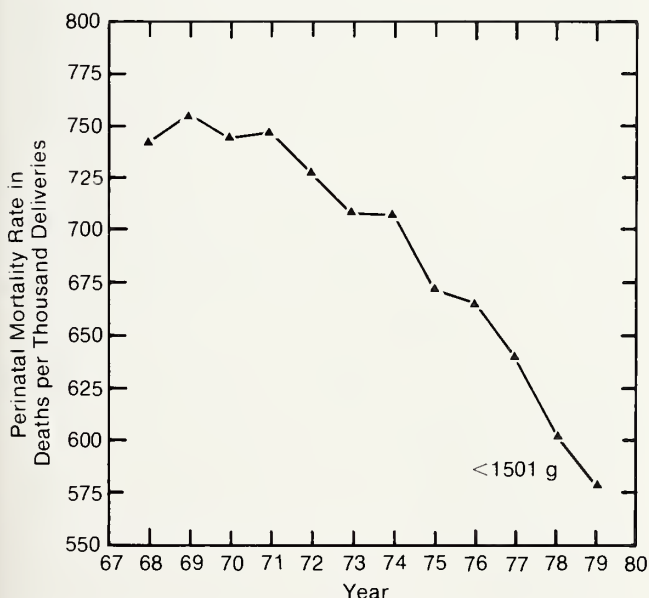


Figure 2. Decline in perinatal mortality rate for deliveries under 1501 grams, 1968-1979.

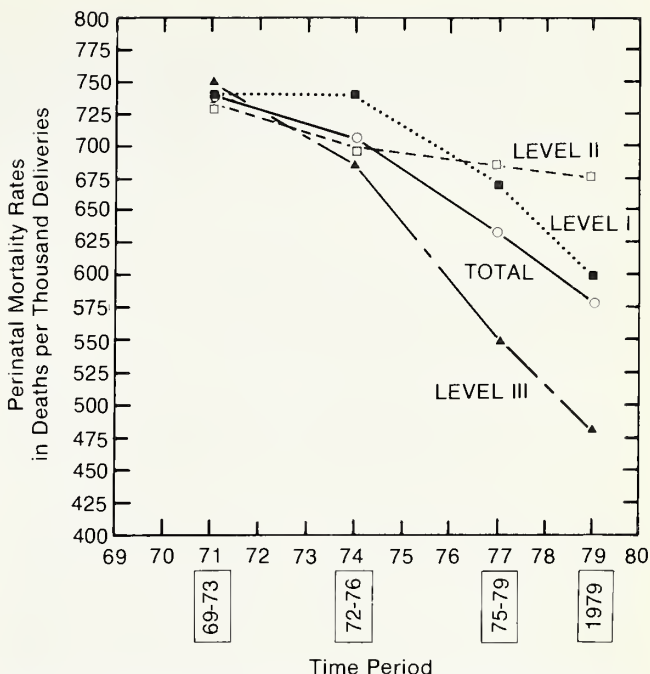


Figure 3. Declines in perinatal mortality rates for deliveries under 1501 grams by nonfederal hospital group, North Carolina, 1969-73, 1972-76, 1975-79 and 1979.

Conclusions

Major developments in perinatal technology occurred in North Carolina in the 1960s and 1970s. New units providing intensive care have been developed in our state area supported, in part, by the RPC Program. Evidence exists that wide utilization of these services through referral has developed and that concomitant declines in perinatal mortality for certain high risk patients has occurred. Whether or not these concomitant changes are causally related cannot be determined from this data; however, their association in time is clear and plausible. Ways must be sought to bring Level II hospitals into greater participation in referral pattern development in order to foster further mortality declines in those centers.

The observed changes in referral patterns and mortality rates occurred with the efforts of many dedicated perinatal professionals in North Carolina. They suggest excellent cooperation between the academic, private and public sectors of perinatal health care.

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The State Center for Health Statistics has made the collection and review of this data possible. Our appreciation is also expressed to Ms. Martha Chandler for the preparation of this manuscript.

National Institutes of Health

CONSENSUS DEVELOPMENT CONFERENCE STATEMENT: COMPUTED TOMOGRAPHIC SCANNING OF THE BRAIN

A Consensus Development Conference held at the National Institutes of Health on November 4, 5, and 6, 1981, reviewed scientific evidence related to computed tomographic scanning (CT) of the brain.

At NIH, the Consensus Development Conference brings together investigators in the biomedical sciences, clinical investigators, practicing physicians, and consumer and special interest groups to make a scientific assessment of technologies, including drugs, devices, and procedures, and to seek agreement on their safety and effectiveness.

On the first two days of the meeting, a Consensus Development Panel and members of the audience heard evidence presented on the following key issues:

What are the indications and contraindications for employing CT scanning for diagnosis of intracranial lesions? How much radiation is delivered by presently available CT scan equipment? To what extent has CT scanning influenced the management of intracranial disorders? Has the availability of CT brain scanning influenced the use of other methods of imaging the brain? What is the practical limit of definition of CT scanning?

Members of the panel included physicians and scientists representing biomedical research, radiology, pediatric and adult neurology, neurosurgery, radiation therapy, radiation physics, critical care medicine, family practice, hospital administration, health economics, and other fields relevant to a discussion of CT.

CT is a remarkable new development in radiographic imaging which, in only eight years, has transformed the diagnosis and much of the management of structural disease of the brain and its surrounding tissue. Presentation by experts from a variety of fields indicated that CT is a safe, accurate, and powerful tool in the primary diagnosis of, among other conditions, brain tumors, brain hemorrhages, effects of major head injury, and certain infections of the brain. Given its speed, accuracy, and low radiation dosage, CT has displaced a number of other radiologic diagnostic procedures, many of which are, in comparison, more uncomfortable, more dangerous, and more costly to the patient.

The panel considered the geographic distribution of CT scanners and the current patterns of diagnostic usage. Two important considerations emerged. It appears that in the U.S. today, CT may not be suffi-

ciently available for the public to derive the full benefit of its use. Evidence points to an insufficient number of instruments in several large metropolitan areas, in medically underserved areas, and in some sparsely populated regions where the prevalence of head trauma is high. In some instances, however, the indiscriminate use of CT has occurred in patients unlikely to have structural disease, resulting in displacement of patients for whom this technology is critical. Accordingly, this consensus report suggests appropriate criteria for the use of CT in present medical practice.

1. What are the indications for employing CT scanning as a primary or secondary diagnostic tool for intracranial lesions?

CT is the most useful diagnostic procedure available for a number of intracranial disorders. Its efficacy, particularly in the detection of traumatic and neoplastic lesions, is well established. There is evidence that CT has been a major factor in decreasing morbidity and mortality, especially in severe head injury and brain abscess. The presence of the former or suspicion of the latter presents clear indication for CT.

CT detection of intracranial tumors is now so well established that the suspicion of any intracranial mass lesion from history or neurological examination is a clear indication for the procedure. Spontaneous intracranial hemorrhage is also readily detected by CT, and suspicion of its presence represents important indication as do suspicion of arteriovenous malformation, hydrocephalus, herpes encephalitis, parasitic infestations, and progressive degenerative diseases of the brain.

For most cerebral vascular ischemic events, including transient ischemic attacks (TIA's), CT may not be required for diagnosis. The procedure, if available, is helpful when using anticoagulant therapy. CT will clearly distinguish infarction from hemorrhage when that distinction must be made. CT will also permit detection of such lesions as meningiomas or subdural hematomas. This discrimination is particularly important in patients with these conditions who have transient symptoms similar to TIA.

CT should not be employed as a routine screening procedure when a low diagnostic yield is anticipated. There is little indication for the procedure following minor head trauma, simple or periodic headache, syncope, or dizziness unattended by other neurological symptoms or signs. Most patients with headache should be considered for CT scanning only if the symptom is severe, constant, unusual, or associated with abnormal neurological signs.

In adults with seizure disorders indications are vari-

able. CT is essential when seeking a potential structural cause of complex partial (temporal lobe/psychomotor) or focal seizures. The finding of an obvious clinical cause for seizures such as a withdrawal state or metabolic disturbance usually obviates the need for CT. If seizures remain uncontrolled and the initial CT was normal, the scan should be repeated at appropriate intervals.

In infants and children, CT is useful as a primary diagnostic tool in the evaluation of intracranial hemorrhage and mass lesions. CT may be used to evaluate patients postoperatively and those who have received radiotherapy.

In children, CT should be considered a primary diagnostic modality for evaluation of severe head trauma, other causes of increased intracranial pressure, undiagnosed coma, progressive focal neurological signs or symptoms, megaloccephaly, and selected neurocutaneous syndromes. CT will also reveal major congenital anomalies of the brain. It can demonstrate perinatal intraventricular hemorrhage, but transfontanel ultrasonography is the preferred diagnostic procedure in infants under one year of age because of the portability of the ultrasonic equipment and the ease of performing this test.

CT is not necessary in evaluating the majority of children with developmental retardation, cerebral palsy, seizure disorders, or headaches, because the presence of a surgically treatable lesion is extremely low. Clinical situations must, in each case, be considered individually.

2. Are there specific contraindications?

CT is a remarkably safe diagnostic procedure, and there are no absolute contraindications to its use. Its employment carries, nevertheless, potential hazard, as does any diagnostic procedure. These include removal of a critically ill patient from intensive medical and nursing care; adverse response to contrast material; and possible delay in providing emergency life-saving treatment for immediate life-threatening conditions such as acute arterial epidural hematoma. CT scanning facilities should have immediately available the staff and equipment to manage cardiorespiratory and neurological emergencies. The staff itself should be skilled in methods to prevent movement artifacts.

The use of contrast agents, usually administered intravenously, increases accuracy and may assist in characterizing lesions. The benefits of enhancement must be balanced against the increased risk to the patient should an adverse reaction occur. The total risk of the use of contrast materials is small, and the incidence of severe reactions does not exceed 0.04%. Reactions, when they do occur, include allergic manifestations, hypotension, congestive heart failure, the development of renal insufficiency, and possibly adverse effects on the brain. The likelihood of complications is increased by advanced age, the presence of diabetes, cardiac, renal, or cerebral vascular disease, and by the administration of large doses of contrast material.

3. How much radiation is delivered during use of currently available CT scan equipment, and how is this dosage commonly expressed?

CT irradiates a transverse section of the skull with a narrow x-ray beam, commonly 10 mm wide in equipment currently available. No single number can completely characterize the dose delivered to that section because the dose is not completely uniform throughout. For many purposes, the use of an average dose per section suffices. Typically, 10 adjacent transverse scan sections, each of 10 mm width, are sufficient for examination of the entire brain. The average dose to the entire brain can be estimated from the average dose to each section. In addition to the average dose, the surface dose and doses of other points may also be stated.

The dose delivered to the brain depends upon individual machine characteristics and mode of operation, which include the kilovoltage and milliamperage of the x-ray tube, the exposure time and tube current, the beam filtration, the x-ray target-to-patient distance, the CT detectors used, the scan angle, etc. Because modern CT scanners utilize narrow x-ray beams with good radiation shielding, there is little dose delivered to tissues outside the imaged volume. Doses to sensitive organs, such as the thyroid gland and the gonads, which are well outside the useful beam, are much less than that received by the brain. The radiation dose to the lens of the eye is low if it is outside of the area scanned. Scanning should exclude the eye unless it cannot be avoided. Adequate maintenance and proper use of the scanner by trained technicians is necessary to insure that the radiation dose is the minimum required for the examination.

The unit by which dose is expressed is currently undergoing a transition from the commonly used rad (100 ergs/gram) to the gray (1 joule/kilogram). The relationship between the rad and the gray is: 1 gray = 100 rad. In this report, the unit centigray (cGy) will be used (one centigray = 1 rad). The average dose to the brain for a complete scan series ranges from about 1-10 cGy. This range is comparable to or less than the dose from many other procedures commonly used in



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diagnostic or dental radiology. Thus, as an x-ray procedure, routine CT does not deliver a particularly high radiation dose.

As is the case for all x-ray studies, particular consideration is needed in the examination of infants and children. The effects of repeated cumulative low-level radiation doses to the immature, developing brain (particularly from birth to two years of age) are as yet unknown. Special caution must be exercised in ordering multiple CT scans. In the infant, as noted earlier, ultrasound is often preferred to monitor the status of abnormalities such as hydrocephalus.

Certain practices, including repeated scans, can increase the dose delivered. Special techniques — such as overlapping sections to detect small abnormalities, very thin sections to permit multiplanar reformatting,* slow scans to improve resolution, and dynamic scanning** — all increase radiation dose. These studies may contribute useful information in specific cases but they are not recommended for routine use.

4. To what extent has CT scanning influenced the management of intracranial disorders, such as malignancy, trauma, vascular anomalies, and cerebrovascular disease?

CT has had a major influence in the management of many intracranial disorders. It is a procedure entailing minimal discomfort and morbidity while producing a high degree of diagnostic accuracy. Lowered morbidity and mortality result from the decreased use of invasive diagnostic procedures.

Prompt employment of CT has improved the management of severe head trauma. The identification of traumatic intracranial lesions causing increased intracranial pressure has led to early surgical treatment of hematomas, the elimination of unnecessary surgical explorations, and more effective medical management. Evidence suggests that early surgical removal, i.e., within four hours, of acute subdural hematomas has decreased mortality and morbidity. In patients with head trauma sequential the identification of expanding intracranial subacute and chronic hematomas by CT has improved outcome.

The management and prognosis of patients with brain abscess have been substantially improved since the introduction of CT, probably because early diagnosis permits prompt antibiotic therapy and better judgment as to surgical intervention.

In primary brain tumors, in contrast to other diagnostic modalities, CT has resulted in detection and more accurate localization of smaller lesions, lowered surgical morbidity and mortality, and a decreased length of hospital stay. In metastatic brain tumors, CT leads to earlier identification and localization of single and multiple lesions, permitting optimal treatment. Postoperative complications due to hemorrhage or

edema are identified more accurately, resulting in better treatment. Planning of radiation treatment of brain tumors is aided by CT as is follow-up evaluation after surgery, radiotherapy, and chemotherapy.

CT will usually differentiate between ischemic and hemorrhagic intracranial lesions. This distinction permits selection of patients for medical or surgical therapy. In subarachnoid hemorrhage, CT can obviate the need for lumbar puncture by the demonstration of subarachnoid blood in a high percentage of cases scanned soon after the event. It can be helpful in identifying the source of the bleeding and may be useful in predicting development of vasospasm. CT can help in the recognition of ruptured aneurysms in patients harboring multiple aneurysms and sometimes shows unruptured asymptomatic or symptomatic aneurysms or arteriovenous malformations. In selected cases, better treatment of aneurysms and arteriovenous malformations and prevention of late complications from these lesions result.

5. Has the availability of CT brain scanning influenced the use of other methods for imaging the brain?

The superior ability of CT in the detection of intracranial and intracerebral diseases has profoundly altered the use of several radiographic methods for examining the brain. Skull roentgenography, geometric cranial tomography, cerebral angiography (arterial and venous), pneumoencephalography, positive contrast cisternography, radionuclide brain scanning, and ultrasonic echoencephalography have all decreased in use. Some of these examinations, notably the most invasive, those causing significant patient discomfort, or those with nonspecific diagnostic results have been affected more than others. Pneumoencephalography, radionuclide scans, and ultrasonic echoencephalography have almost disappeared from the neuroradiologic armamentarium where CT has been available. The use of skull roentgenography, geometric cranial tomography, and positive contrast cisternography has declined more recently as "modern" high resolution CT has become available. Such scanners provide bony anatomic information in addition to the unique low-density soft tissue data, available only with CT.

Although the use of cerebral angiography has not diminished to the same extent, it is being used less frequently as a screening or diagnostic procedure.

These developments have had a favorable impact upon health care delivery. CT scanning has often reduced risk and discomfort for patients, and the costs of CT in diagnosis have been substantially offset by a reduction in equipment costs as procedures become outmoded. In some cases, net costs of diagnoses have even been reduced. The panel heard evidence that the use of CT in outpatient diagnosis can reduce hospital admissions and shorten hospital stay.

The success of CT scanning using x-ray has stimulated interest in tomographic imaging with other radiation sources. Similar computer techniques are being used to reconstruct images of the distribution of

*A technique in which the data obtained from a series of scans made in one CT plane are reprocessed in the computer to produce images of sections in other planes through the head.

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Feeling well rested in the morning usually means having slept well the night before. And for insomniac patients receiving hypnotic therapy, a good morning also means awakening with few side effects from their medication. Many physicians choose Dalmane for their patients who suffer from insomnia for this very reason.

Aside from enabling patients to fall asleep more quickly and sleep longer, Dalmane seldom causes morning hangover. Most Dalmane patients feel alert and refreshed when they awaken. In 53 paired-night clinical studies comparing Dalmane and placebo in 2010 insomniac patients with a variety of secondary diagnoses, most Dalmane patients awakened more alert and refreshed, and less groggy and drowsy, than on nights when they had taken only placebo.¹ In a double-blind crossover study of

42 patients in private practice, approximately three times as many patients reported feeling refreshed and alert upon awakening after a night on Dalmane (flurazepam/Roche) compared to placebo nights.² This difference was highly significant ($p < 0.001$). And a retrospective study of 100 hospitalized patients who received Dalmane revealed a 3.1% incidence of side effects.³

While residual effects from Dalmane therapy are infrequent, patients should be cautioned about drinking alcohol, driving or operating hazardous machinery after ingesting the drug.

Efficacy and safety in a broad range of patient types.

Over 2000 clinical trials involving more than 10,000 patients have shown that Dalmane patients fall asleep sooner, sleep longer and experience fewer nocturnal awakenings.⁴ The safety and efficacy of Dalmane have been demonstrated in medical and surgical hospitalized patients, in patients seen in office practice and in elderly patients.⁵⁻⁸ Since the risk of oversedation, dizziness, or

sion and/or ataxia increases with larger doses in the elderly, it is recommended that the dosage be limited to 15 mg.

Moreover, the efficacy and safety of Dalmane for the treatment of insomnia have been demonstrated in thousands of patients with a variety of primary medical conditions, including cardiovascular, neuropsychiatric, endocrine-metabolic, gastrointestinal, genitourinary, respiratory and musculoskeletal disorders.¹ Dalmane (flurazepam HCl/Roche) is contraindicated in pregnancy and in patients hypersensitive to the drug.

Avoids rebound insomnia upon discontinuation.

Rebound insomnia—a worsening of sleep beyond pretherapy levels after drug discontinuation—has been reported as a potential clinical problem with some hypnotics.^{9,10} However, this problem has not been reported with Dalmane. In eight out of eight sleep laboratory studies, there were no reports of rebound insomnia.¹¹ When you prescribe Dalmane, you can be confident of efficacy that enhances therapeutic progress. Your insomniac patients can be assured of a restful night, night after night—a good start for a good morning.

References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Zimmerman AM: *Curr Ther Res* 13:18-22, Jan 1971. 3. Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther* 21:355-361, Mar 1977. 4. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 5. Meyer JA, Kurland KZ: *Milit Med* 138:471-474, Aug 1973. 6. Feller HL, Gibbons B: *Med Times* 101(8):130-135, Aug 1973. 7. Jacobson A et al: *Psychophysiology* 7:345, Sep 1970. 8. Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc* 27:541-546, Dec 1979. 9. Kales A, Scharf MB, Kales JD: *Science* 201:1039-1041, Sep 1978. 10. Kales A et al: *JAMA* 241:1692-1695, Apr 1979. 11. Monti JM: *Methods Find Exp Clin Pharmacol* 3(5):303-326, 1981.

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Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect.

Adults: 30 mg usual dosage; 15 mg may suffice in some patients. **Elderly or debilitated patients:** 15 mg recommended initially until response is determined.

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radioactive isotopes within the brain, procedures called emission computed tomography (ECT). Two forms have been developed, related to the type of radioactive materials and the detection system employed. These are single photon ECT (SPECT) and positron emission tomography (PET) scanning. SPECT and PET allow measurement of such functional variables as local cerebral metabolism and blood flow, which are not measured by CT. They reveal increased vessel permeability when present; this may also be detected on CT by contrast media enhancement. The spatial resolution of these techniques is less than that with CT, and as an imaging device the definition of the anatomic position of the measured function is limited. At present, these techniques are being applied in a few institutions only, and their clinical role in the evaluation of stroke, epilepsy, and the metabolic aspects of mental disorders is the subject of continuing research.

Recently, nuclear magnetic resonance (NMR), a technique using nonionizing forms of energy, has been used to produce sectional images of the human body. A strong magnetic field used in conjunction with a radiofrequency oscillating magnetic field induces signals from atomic nuclei in tissues. These signals are reconstructed by computer into sectional images in any plane of the head or body. The significance of the technique in clinical diagnosis remains to be determined. The potential advantages of NMR as compared to CT are the provision of improved imaging and of identifying the chemical state of some important nuclei from which energy metabolism can be inferred at low resolution. In addition, the potential hazards associated with ionizing radiation are avoided by NMR. There are no known deleterious effects to tissues or organ systems from the magnetic fields and radiofrequency power densities presently used. The extent to which tissue characterization techniques will yield clinically useful information at practical financial costs has yet to be established.

6. What is the practical limit of definition and resolution in CT scanning that may preclude its value in the diagnosis of brain disease?

CT scanners are designed to detect morphologic abnormalities of the brain. In the opinion of the panel, most contemporary scanners meet this goal with a

high degree of accuracy. They discriminate among lesions depending on contrast and size. The lower limit of resolution is difficult to define, but some scanners are capable of detecting pituitary adenomas as small as 3 mm. Unfortunately, there is no way to know how many "negative" examinations are truly negative or simply due to limitations in the method.

Current limitations in the quality of CT scans lie in spatial and contrast resolution and in scan speed. Although dramatic improvements have occurred since 1973, it is unlikely that the current pace can be maintained. Improvement in contrast resolution, or the ability to detect a small signal against a noisy background, without increasing the radiation dose, is dependent on increasing dose efficiency, which is approaching its theoretical limit. Spatial resolution is dependent on improvements in detector and semiconductor technology and can be expected to improve as these technologies advance. An increase in data obtained from selective sampling will lead to optimizing detection for a given signal to noise ratio; however, to obtain quantitative certainty commensurate with the improved sensitivity, radiation dose must be increased. Scan speed is largely limited by x-ray tube output and the ability of the x-ray tube anode to dissipate heat. New developments in x-ray tube design will lead to increases in scan speed.

Thus, cost and the potential risk of increased radiation dose are the major practical constraints on further advancements in CT technology.

The conference was sponsored by the National Institute of Neurological and Communicative Disorders and Stroke and co-sponsored by the National Cancer Institute. Assistance in planning and conducting the meeting was provided by the Office for Medical Applications of Research, NIH.

Members of the Consensus Development Panel were: Fred Plum, M.D. (Panel Chairman), Cornell University Medical College; Hillier L. Baker, Jr., M.D., Mayo Clinic; William F. Collins, M.D., Yale University School of Medicine; Edward R. Epp, Ph.D., Harvard Medical School; Charles A. Fager, M.D., Lahey Clinic Medical Center; Peggy C. Ferry, M.D., University of Arizona Health Sciences Center; C. Earl Hill, M.D., University of Maryland School of Medicine; James E. Marks, M.D., Washington University School of Medicine; Stuart O. Schweitzer, Ph.D., University of California at Los Angeles; Eugene L. Staples, M.H.A., West Virginia University Hospital; Leslie M. Zatz, M.D., Stanford University Medical Center; Dewey K. Ziegler, M.D., Kansas University Medical Center; Jack E. Zimmerman, M.D., George Washington University Medical Center. Conference Coordinators were: Michael D. Walker, M.D., National Institute of Neurological and Communicative Disorders and Stroke; David A. Pistenma, M.D., National Cancer Institute.

A bibliography on Computed Tomographic Scanning of the Brain is available from the Office for Medical Applications of Research, Building 1, Room 216, NIH, Bethesda, Maryland 20205. This bibliography was prepared by the Stroke and Trauma Program, National Institute of Neurological and Communicative Disorders and Stroke.

MOSES BEN MAIMON (MAIMONIDES) [1135-1204]

Excessive eating is like a deadly poison to the body of any man and it is the principle [cause] of all illnesses. Most diseases that man is afflicted with are due to bad foods or because he fills his abdomen and eats excessively, even of good [wholesome] foods.

Mishneh Torah, "Hilchoth De'oth," Ch. IV, No. 15 (tr. by Fred Rosner in *Annals of Internal Medicine* 62:372, 1965)

From the Desk of the Managing Editor

COMPETITION IN HEALTH CARE

The Reagan Administration has indicated that it will propose "pro-competitive" legislation to reform the health care delivery system. What the proposals look like is unclear at this time, but it is certain that any such legislation, if passed, will dramatically alter the delivery of medical services in our country today.

Clark C. Havighurst, professor of law at Duke University, addressed the issue of competition in health care at the North Carolina Medical Society's Mid-Winter Conference held in Winston-Salem in February of this year and in so doing explained the concept, its history, and its current legislative status.

Not too long ago, the public debate over health care delivery centered around a national health insurance program with government as the third party payor ("Health care is a right."). This placed emphasis on expanding government programs and making government — the public sector, not the private sector — a primary purchaser or payor. However, times change. Disillusionment with government, a growing awareness that regulation often increased costs, and a

move toward identifying health as a personal responsibility have made the public and Congress more cautious with regards to public-sector-type solutions.

Havighurst is quick to point out that these changes in attitude and orientation actually began in the 1970s and gave rise at that time to competitive alternatives — alternatives, he says, which now are under serious consideration.

Explaining the market approach, Havighurst emphasizes that it is based on an economic analysis of how the current health care system works. That is, market advocates "... do not depend so much on theory as on a pragmatic assessment of the available alternatives. . . . And the best way to let us know if the industry is doing well or poorly is to let the consumers express their preferences and their opinions in the competitive market place." The goal of pro-competition legislation is to see that the market is functioning in such a way as to place the decision to spend money (or not) upon the consumer as opposed to government. Market advocates see the consumer as regulator: "In a well-functioning competitive market, demand is relatively independent of supply, with consumers able to make informed decisions about the products or services they wish to purchase based on their individual desires. Price is the great equilibrator of supply and demand, acting both as a measure of the benefit of a product and as a catalyst that calls forth greater supply when consumers demand more. Suppliers, too, must compete for the limited funds that consumers allocate for their products, and therefore are engaged in a constant effort to cut costs and to enhance the value of their products." (Business Week, 8 February 1982, Page 59.)

The proposals now under consideration by the Administration include:

- A tax credit to encourage employers to offer employees several health plans including at least one lower-priced plan with substantial cost sharing by the patient. (To protect against costs of catastrophic illness, all plans would have to limit total output per family.)
- A limit on the amount of insurance that can be provided as a tax-free fringe benefit to reduce the existing tax subsidy for employers who choose expensive, comprehensive insurance.
- A requirement that employers contribute the same premium amount to all plans offered in order to make consumers more aware of cost: those choosing lower-priced plans would receive a tax-free rebate of part of the employer contribution.
- A voucher payment plan whereby Medicare re-



Photo by April Hart

Clark C. Havighurst
"... we have come a long way since 1978
in that we have a very different policy agenda . . ."

cipients can voluntarily enroll in private health plans.

As mentioned above, the details of the program expected to be proposed by the Administration are unknown at this writing.

However, Havighurst stresses that "... we have come a long way since 1978 in that we have a very different policy agenda. . . . The market strategy now has the upper hand in the momentum that regulation seemed to have had not so very long ago. . . ." Havighurst seems to be warning deliverers of health

care that the time is now to decide how and where they will fit into the market strategy.

Certainly, many questions with regard to these proposals remain to be answered. Any attempt to ration medical care (for that is, essentially, what is being proposed) will adversely affect some people and, thus, it may seem inhumane or amoral to many. But failure to move now will only bring us closer to more serious financial difficulties.

There are no ideal solutions: our resources are finite but medical needs infinite.

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In-State

August 28-29

"Dermatology for the Non-Dermatologist"

Place: Wilmington

Fee: \$75

Credit: 7 hours (AAFP applied for)

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

September 8

"Cancer Day 1982"

Place: Greenville

Fee: \$50

Credit: 6 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

September 10-11

"Intraocular Lens Implantation Workshop"

Place: Chapel Hill

Fee: \$50

Credit: 16 hours

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

September 12-16

"Family Medicine Review"

Place: Winston-Salem

Fee: \$345

Credit: 40 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

September 23-26

"Urologic Malignancies"

Place: Pinehurst

Credit: 16 hours

Info: Linda Mace, Assembly Secretary, Box 3707, Duke Hospital, Durham, NC 27710

September 24

"Fourth Annual Health Law Forum"

Place: Greenville

Fee: \$100

Credit: 7 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

n 1977, when
the Veterans Administration
compared Step-2
regimens in 450 mild
hypertensive patients,
which regimen was
proven most effective?'



September 28

"The Role of Physician and Minister in Patient Care"

Place: Greenville

Fee: \$25

Credit: 3 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

October 6

"Surgical Update for Non-Surgeons"

Place: Greenville

Fee: \$50

Credit: 6 hours, AMA Category I and AAFP

Info: Edwin W. Monroe, M.D., P.O. Box 7224, Greenville, NC 27834, 919-758-5200

October 8

"Seminar in Medicine"

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

October 22-23

"Nutrition and Cancer: The 15th Annual Malignant Disease Symposium"

Place: Chapel Hill

Fee: \$125

Info: Mimi Minkoff, Cancer Research Center, Box 30, MacNider Building, Chapel Hill, NC 27514

October 27

"Calcium Antagonists: A New Era of Therapy for Cardiovascular Diseases"

Place: Greenville

Fee: \$50

Credit: 6 hours, AMA Category I and AAFP

Info: Edwin W. Monroe, M.D., P.O. Box 7224, Greenville, NC 27834, 919-758-5200

Out-of-State-Southeastern Region

August 5-7

"The 4th Annual MCV Pediatric Primary Care Conference: Pediatrics at the Beach"

Place: Virginia Beach, Virginia

Info: Kathy E. Johnson, Box 48, MCV Station, Richmond, VA 23298, 804-786-0494

August 2-7

"Tenth Annual Beach Workshop"

Place: Myrtle Beach, South Carolina

Fee: \$175

Credit: 20 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

August 13-14

"EKG Interpretation and Arrhythmia Management"

Place: Nashville, Tennessee

Fee: \$245

Credit: 13 hours, Category I: 13 hours, AAFP

Info: IMEC, Division of Postgraduate Education, 64 Inverness Drive East, Englewood, Colo 80112, 800-525-8651

September 24-26

"Southern Medical Association Postgraduate Meeting"

Place: New Orleans, LA

Info: Jeanette Stone, Southern Medical Association, P.O. Box 2446, Birmingham, Ala 35201

October 4-8

"International Symposium of Diagnostic Imaging"

Place: Bermuda

Fee: \$475

Credit: 25 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology — Box 3834, Duke University Medical Center, Durham, NC 27710

October 25-29

"Dermatology for Non-Dermatologists"

Place: Bermuda

Fee: \$325

Credit: 14 hours, AMA Category I and AAFP

Info: "Dermatology for Non-Dermatologists," P.O. Box 2987, Duke Medical Center, Durham, NC 27710, 919-684-2504

October 30-November 2

"76th Annual Scientific Assembly"

Place: Atlanta, GA

Info: Southern Medical Association, P.O. Box 2446, Birmingham, Ala 35201, 205-323-4400

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh 27611, two months prior to the month in which they are to appear. A "request for listing" form is available upon request.

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North Carolina Medical Society Auxiliary

THE AUXILIARY'S ROLE IN COMBATting THE FINANCIAL CRISIS IN MEDICAL EDUCATION

It has been predicted by the American Medical Association that proposed cutbacks or even cancellation of the Guaranteed Student Loan program for medical students will have "... a drastic effect upon the future financing of medical education."

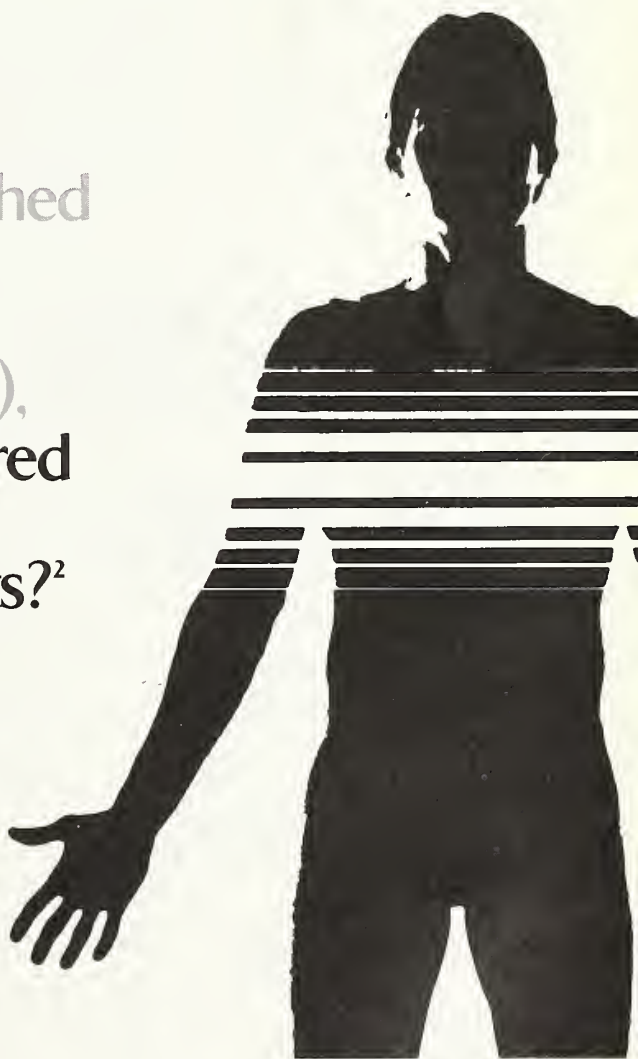
Testifying before the House Appropriations subcommittee on health, the American Medical Association representatives said that elimination of the Guaranteed Student Loan program would take away \$190 million in aid granted to more than 40,000 medical students in the 1980-81 academic year. This accounts for about half of the financial aid available to medical students. James H. Sammons, M.D., AMA executive vice-president, expressed the fear that medical education would be out of the financial reach of some of the most capable students if such aid is curtailed. If it does happen, how can aid be obtained for worthy students?

One program in existence, since 1951, is the American Medical Association Education and Research Foundation (AMA-ERF), a non-profit organization established to support medical education through financial assistance to students as well as to award funds for research grants and rural community-oriented pilot health projects. AMA-ERF is the AMA

Auxiliary's only philanthropic endeavor. Since 1951 the auxiliary has raised over \$32 million for AMA-ERF, with over \$1.6 million raised last year alone. Funds have been contributed largely by physicians and their spouses through projects sponsored by local county auxiliaries and personal donations. Contributors may specify a particular medical school, if desired, to receive their donations.

With other sources of aid, both for students and medical schools, diminishing, the role of the volunteer organization has never been so vital. The North Carolina auxiliary has a splendid record in supporting AMA-ERF; members donated \$26,834.57 in 1980-81. North Carolina auxiliary members also support a Student Loan Fund. Loans up to \$1,000 are available to worthy North Carolina residents who have completed at least two years in a North Carolina medical school. Preference is given to sons and daughters of physicians, but all aid is based on need. Mrs. Charles P. Ford, Jr., is chairman of the Student Loan Fund com-

n 1979, when results were published
for the five-year, 10,000-patient
Hypertension Detection and
Follow-up Program (HDFP study),
which Step-2 regimen was preferred
and was deemed effective
without significant adverse effects?²



mittee and may be contacted at Route 1, Box 855-M, 5216 Emerald Drive, Morehead City, N.C. 28557, for further information. Other funds administered by Mrs. Ford's committee are the Stevens Yoder McCain Cooper Education Foundation Fund (SYMCEF Fund) and the Mental Health Research Endowment Fund, both offering aid to students in the health professions.

Anita D. Taylor
Winston-Salem, N.C.

News Notes

Duke University Medical Center

The Cancer Information Service at Duke's Comprehensive Cancer Center will continue at least another three years thanks to a \$678,000 contract just renewed by the National Cancer Institute.

North Carolina residents can call the service without charge from any phone in the state by dialing 1-800-672-0943. Specially trained staff members and volunteers answer the phones from 9 a.m. until 4:30 p.m. weekdays. At other times, a caller can leave his

or her name and phone number on an answering device; someone from the Cancer Information Service will call back.

"The purpose of the telephone service is to transfer and translate cancer research findings to the community — both the public and health professionals," said Dr. Diane McGrath, director of the Cancer Education and Communication Program at the cancer center.

A distinguished professorship has been established in honor of a former medical center obstetrician and gynecologist, Dr. James M. Ingram. The chair will support a professor at Duke who is involved in cancer research or treatment at the Department of Obstetrics and Gynecology.

The Ingram Chair was established primarily through the generosity of a St. Petersburg, Fla., couple. In the mid-1960s, Richard and Luceil Vansant provided in their wills for contributions to the Ingram Fund at Duke. At that time, Ingram was in private practice in Tampa, Fla., and was Luceil's personal physician.

Ingram was graduated from Duke's School of Medicine in 1943. After completing a residency in obstetrics and gynecology at Duke, he was a private ob-gyn practitioner in Tampa for 20 years. In 1971 he accepted the chairmanship of obstetrics and gynecology at the newly formed medical school, the University of Southern Florida at Tampa.



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Dr. Samuel L. Katz, chairman of Duke's Department of Pediatrics, was one of two physicians leading an "International Symposium on Measles Immunization" in Washington, D.C., which included physicians and/or public health officials from every nation in the world.

Katz was chosen as one of the leaders of the symposium because his laboratory work in the late 1950s led to the production of the measles vaccine. The measles vaccine has eliminated 99.9% of the reported cases of measles in the U.S.

Two brain cancer specialists at the medical center were selected to receive an international award for young researchers in the neurosciences. The award was presented at the First World Congress of "The Brain in Health and Disease."

Dr. Dennis Bullard, an assistant professor of surgery and pathology, and Dr. Clifford Schold Jr., an assistant professor of medicine and pathology, were

honored March 31 in Lausanne, Switzerland. Both are members of the Comprehensive Cancer Center.

Bullard, 31, is a neurosurgeon interested in new ways of detecting and treating brain tumors. He has worked with other Duke researchers on a new method for pinpointing tumors in the brain before surgery.

Schold, 34, specializes in drug treatments for brain cancers. He supervises the treatment of brain tumor patients at Duke needing chemotherapy, and he is testing new ways of selecting drugs that might be useful against brain cancers.

In a move designed to cut costs, time and anxiety for patients, Duke Hospital opened the first compact Cardiac Diagnostic Unit (CDU) in this part of the country.

The CDU is a collaborative enterprise of the Duke departments of surgery, medicine, radiology and biomedical engineering, according to the director of the unit, Dr. Joseph A. Kisslo Jr.

In 1980, when the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure published their recommendations, which Step-2 regimen best met their criteria for effectiveness, safety, simplicity of titration, convenience, and economy?³



"The CDU is the result of a cooperative effort that few hospitals the size of Duke have been able to achieve," Kisslo said. "We're much more than a collection of labs that happen to be in one geographic area. We offer patients with suspected heart disease a central location for a complete, one-day evaluation and thus enhance patient care and physician effectiveness."

He said all cardiac tests, including standard EKGs, treadmill exercise tolerance testing, nuclear cardiology studies and echocardiographies, are performed in a self-contained area on the second floor of the south division.

Kisslo said Duke inpatients and outpatients can be referred to the CDU, go through the complete repertoire of testing and be through in about two-and-one-half hours. To make the testing process time-effective, Kisslo said attending physicians should include a complete list of the tests needed in the initial scheduling.

The doctor added that people seeking cardiology

testing don't have to be Duke patients. He said one phone call to the CDU can book a patient for a selection or all of the tests. The number to call for scheduling is (919) 684-3100.

An endowment established by a cardiovascular researcher in Washington, D.C., will allow students from Duke and other institutions to spend their third year doing cardiovascular research.

The Stanley J. Sarnoff Endowment for Cardiovascular Science, Inc. awards scholarships to third-year medical students for 12 months of study at an institution other than where they are enrolled, according to Dr. Galen Wagner, associate professor of medicine and director of Duke's Cardiac Care Unit.

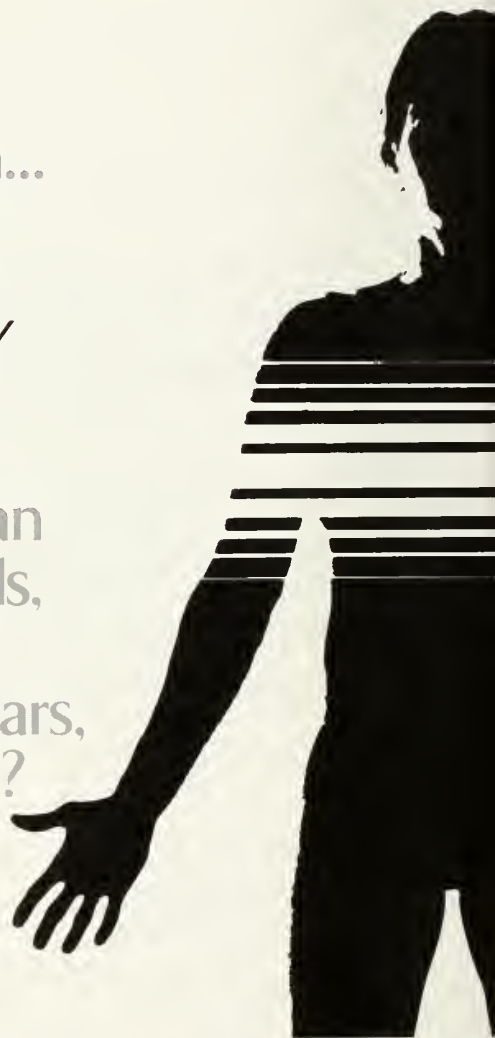
He said Duke is one of several charter institutions that will control the endowment through a board of directors.

"It's a very important program and I'm very pleased that Dr. Sarnoff has chosen to support it. It

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demonstrates the kind of innovative thinking we're going to need for the quantity and quality of investigators needed to develop new areas of medicine," Wagner said.

Duke physicians have begun using sclero-therapy to treat patients with variceal bleeding. The non-surgical therapy is offered through Duke's endoscopy service, headed by Dr. John T. Garbutt. In the procedure, physicians use an endoscope to inject a blood-clotting medication directly into the veins.

Garbutt said the sclero-therapy costs a fraction of the surgery traditionally done to stop the bleeding veins, and patient recovery time is much shorter, usually only requiring a two-day hospitalization.

Dr. Robert L. Heacock, an associate in medicine and fellow in gastroenterology said, "so far results in medical literature indicate that this procedure reduces rebleeding by about 60%." That figure is significant, he said, because the risk of death from continued

bleeding from varices (dilated veins in the esophagus) is very high.

"Normally about half of variceal bleeding patients will rebleed within a year," Heacock said. "This procedure reduces the number of rebleeders so that only about one-fifth will bleed again."

Heacock said the procedure also has been used for acute bleeding from varices, and preliminary results indicate a 90% success rate.

Dr. F. Stephen Vogel, professor in the Department of Pathology, became president-elect of the U.S.-Canadian division of the International Academy of Pathology April 1. He will assume presidency of the academy in April, 1983.

Vogel has been a member of the academy for 20 years. For the past four years, he was chairman of the academy's Education Committee. He joined Duke as a professor of pathology in 1961.

And there's more proof on the way!

1982 will see the completion of the Multiple Risk Factor Intervention Trial (MRFIT)—a six-year, 12,000-patient study assessing the factors that increase risk of cardiovascular disease. For the management of hypertension, the preferred Step-2 regimen in this study is reserpine-thiazide.

In 1978, in a preliminary report presented to the Epidemiology Section of the American Heart Association (Dallas, Nov 1978), after 12 months of the trial, fewer patients (5.3%) treated with reserpine suffered depression than even the untreated control group (7.7%)!

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11/81

Dr. Charles E. Putman, professor and chairman of the Department of Radiology, has been chosen the hospital's clinical chairman. Putman replaces Dr. James B. Wyngaarden, former chairman of the Department of Medicine, who has been nominated to direct the National Institutes of Health.

As chief of staff, Putman will be a "valuable link between the clinical departments, the medical staff and the hospital," said Dr. Andrew G. Wallace, associate vice president for health affairs. Putman also will serve as a liaison between the medical staff, the chancellor and the university's board of trustees.

Putman joined the Duke staff in 1977 after leaving the position of clinical director of diagnostic radiology at Yale University School of Medicine. He earned his M.D. degree at the University of Texas, Medical Branch in Galveston, and served his residency in internal medicine there after serving an internship at the University of Iowa. He completed a radiology residency at the University of California, San Francisco.

He is the author or co-author of more than 80 publications and 15 chapters in a variety of texts. He is co-editor of "Intensive Care Radiology: Imaging of the Critically Ill," and the editor of "Pulmonary Diagnosis Imaging and Other Techniques."

waste, says a medical center professor of biochemistry, Dr. Henry Kamin.

Kamin, who is chairman of the National Academy of Sciences-Food and Nutrition Board's committee on dietary allowance, explained the myths and realities of vitamins to about 150 people at a "health night out" lecture in April at the medical center. The talk was the eighteenth in a series of free monthly programs sponsored by the medical center's public relations office.

"Taking in more vitamins than your body needs is like trying to add a fifth or sixth wheel on your car," Kamin said. "There's no axle to hold them, and it doesn't make it work better."

The biochemist devoted a significant portion of his lecture to setting the record straight about the function of vitamins. He also discussed the use of vitamin supplements and who should use them, as well as recommended dietary allowances.

Ralph E. Smith, professor of microbiology, received a \$63,565 research grant from the National Cancer Institute to study the biochemistry of RNA tumor virus replication.

Stanley C. Schold Jr., assistant professor of pathology, received a \$29,108 new investigator research award from the National Institute of Neurological and Communicative Disorders and Stroke to study growth and treatment of human gliomas in athymic mice.

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Brief Summary of Prescribing Information (12) 10/27/78

For complete information consult Official Package Circular.

WARNING

This fixed combination drug is not indicated for initial therapy of hypertension. Hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension is not static, but must be reevaluated as conditions in each patient warrant.

CONTRAINDICATIONS

Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or

without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy

Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia

(especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

John M. Falleta, associate professor of pediatrics, received an \$86,433 clinical cooperative grant from the National Cancer Institute for the Southeast Oncology Group.

Patrick A. McKee, professor in the Department of Medicine, received \$89,422 for research from the National Heart, Lung and Blood Institute to study "Structure-Function Studies of Human Factor VIII/VWF."

Bruce A. Freeman, medical research associate in the Department of Medicine, received a \$30,000 research grant from the American Lung Association to support his project, "Oxygen Radical Production and Antioxidant Defenses of Lung Endothelial Cells."

Frederick H. Schachat, assistant professor of anatomy, received an \$85,683 research grant from the National Institute of Neurological and Communicative Disorders and Stroke. He is studying "Patterns of Gene Expression in Mammalian Muscle Fibers."

Dr. Allen R. Dyer and Dr. Suydam Osterhout received a \$47,774 grant from the National Fund for Medical Education to support their project, "An Investigation of Non-Cognitive Criteria (Primarily Moral Reasoning) in the Medical School Admissions Process." Dyer is an assistant professor of community and family medicine and Osterhout is associate dean for medical school admissions.

Jeffrey R. Dawson, associate professor of immunology, received a \$77,356 research grant from the

National Cancer Institute. He is studying "Immunity to Human Cancer-Functional Components."

Dr. James R. Urbaniak, professor of orthopaedic surgery, received a \$100,250 research award from the National Institute of General Medicine Sciences. Urbaniak is studying tissue injury, revascularization and transplantation.

Sharyn A. Endow, assistant professor of microbiology, received a \$38,426 grant from the National Institute of Child Health and Human Development to study genetic mechanisms affecting gene copy numbers.

Robert H. Harris, associate professor in the division of nephrology, received a \$63,287 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. Harris is studying urinary factors influencing renal function and growth.

David J. Madden, assistant medical research professor of medical psychology, received a \$40,390 award from the National Institute on Aging. Madden is researching age and selective attention in visual search.

D. Bernard Amos, professor of immunology and experimental surgery, received a research grant of \$6,144 from the National Cancer Institute. The title of Amos' study is "F.A.C.S. of Immunologic Components."

Jacob J. Blum, James B. Duke Professor of physiology, received a \$102,977 research grant from the

ADVERSE REACTIONS

Hydroflumethiazide

Skin-rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation.

Reserpine

Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares.

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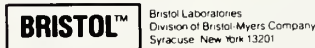
1 tablet b.i.d.

SUPPLIED

Bottles of 100 and 1000 scored 50 mg. tablets.

References:

1. Propranolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
2. Five-year findings of the hypertension detection and follow-up program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. Hypertension Detection and Follow-up Program Cooperative Group. *JAMA* 242:2562-2571, 1979.
3. The 1980 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Intern Med* 140:1280-1285, 1980.



National Institute of Child Health and Human Development to study the control of metabolism in tetrahymena and hepatocytes.

Paul L. Modrich, associate professor in the Department of Biochemistry, received a \$175,363 research grant from the National Institute of General Medical Sciences for an NIGMS shared instrumentation grant.

Ronald B. Corley, assistant professor in the division of immunology, received a \$60,092 grant from the National Institute of Allergy and Infectious Diseases. The title of his research project is "Helper T Cells: Comparison of T-T and T-B Interaction."

J. Victor Nader in the Department of Pharmacology received a \$32,138 research grant from the National Institute of Neurological and Communicative Disorders and Stroke to study excitatory amino acid transmitters in CNS.

Harold P. Erickson, associate professor in the Department of Anatomy, received an \$85,021 grant from the National Heart, Lung and Blood Institute to study electron microscopy of plasma and cell surface proteins.

George L. Maddox, director of the Center for the Study of Aging, received \$154,682 from the National Institute of Aging to fund research support services for the gerontology center.

Tao-Shih Hsieh, assistant professor of biochemistry, received a \$58,620 research grant from the National Institute of General Medical Sciences to support his project, "DNA Topoisomerase: Function and Mechanism."

Alan D. Magid, assistant medical research professor of anatomy, received a \$64,841 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study the third filament of striated muscle.

James E. Lowe, assistant professor of surgery, received \$65,340 from the American Heart Association for a two-year funding of his project, "Identification of Ischemic Injury During Cardiac Operations."

Stuart Handwerger, professor of pediatrics and associate professor of physiology, received a \$118,547 research grant from the National Institute of Child Health and Human Development to study the physiology of placental lactogen. He also received a \$64,495 grant to study decidual prolactin in normal and pathologic pregnancies.

Michael A. Hamilton, clinical assistant professor in the Department of Community and Family Medicine and director of the Physician's Assistant Program, received a \$174,095 grant award from the division of medicine for continuation of the Physician's Assistant Program.



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Daniel B. Menzel, professor of pharmacology and associate professor of medicine, received a \$96,680 research grant from the National Institute of Environmental Health Sciences to study "Sulfur Dioxide and Pulmonary Detoxification Mechanisms."

**The Bowman Gray
School of Medicine
Wake Forest University**

The Frank R. Lock Chair in Obstetrics and Gynecology has been established at the Bowman Gray School of Medicine. Dr. Frank C. Greiss Jr., chairman of the Department of Obstetrics and Gynecology, has been selected for the endowed professorship which was established in memory of the medical school's first chairman of obstetrics and gynecology.

The chair was created through contributions from Dr. Lock's former residents, patients, colleagues and friends.

Lock was named chairman of the department in 1941 and held that position for 25 years. He died in 1979. He was the only person ever to serve simultaneously as president of the American College of Obstetricians and Gynecologists and the American Association of Obstetricians and Gynecologists. He also served as president of the American Gynecological Society.

Greiss, who was appointed to the Bowman Gray faculty in 1960, has been chairman of the department for the past 10 years. He has achieved national recognition for his research on factors controlling blood flow to the pregnant and non-pregnant uterus. For his work he was awarded the Foundation Prize of the American Association of Obstetricians and Gynecologists.

Greiss is a past president of the Southern Gynecological and Obstetrical Society and a former member of the council of the American Gynecological Society.

Research at the Bowman Gray School of Medicine has shown that many cases of age-associated impotence may be the result of atherosclerotic obstruction of blood vessels serving the genital area.

The study was conducted by a team headed by Dr. Michael R. Adams, assistant professor of comparative medicine, who reported the results at the 66th meeting of the Federation of American Societies for Experimental Biology.

Observations of atherosclerotic and control adult male monkeys, matched for age and sexual-social experience, indicated that sexual performance was impaired significantly in the atherosclerotic monkeys despite the fact that those monkeys were 7-11 years of age. That age range is close to the prime breeding age for male macaque monkeys.

Behavioral studies showed no difference between the atherosclerotic and normal monkeys in sexual

interest or general sociability. But there were statistically significant differences between the two monkey groups in the frequency of erection and ejaculation.

Incomplete erections were common among the atherosclerotic animals.

Results of Bowman Gray research have implicated psychosocial stress as a significant factor in the development of atherosclerosis.

Adult male cynomolgus monkeys living in either stable or unstable social environments were studied. The monkeys were fed low-cholesterol, low-fat diets.

A research team headed by Dr. Jay Kaplan, assistant professor of comparative medicine, found that the extent and severity of coronary artery atherosclerosis developed by the monkeys in the unstable environment was far greater than that found in monkeys in the stable groups. That occurred in the absence of traditional risk factors such as high cholesterol levels and high blood pressure.

Thirty monkeys were randomly assigned to six groups of five monkeys each. Three of the groups were designated as unstable and had their membership altered periodically through the transfer of monkeys among them. Membership in the other three groups remained stable throughout the 22-month study.

The social reorganization plan was used to induce stress.

Among the animals in the unstable groups, the arteries of dominant monkeys had more severe lesions than those of subordinates. Dominant monkeys in unstable groups also had more severe artery disease than dominant monkeys in stable groups. Dominant and subordinate animals in the stable groups did not differ in atherosclerosis severity or extent.

A former graduate student at Bowman Gray has developed a 10-minute procedure that allows testing for rubella and inoculation against the disease. And the process can be done in a doctor's office.

Dr. Preston Dorsett of Salisbury, N.C., who earned the Ph.D. degree in microbiology at Bowman Gray, developed the test, called the Rubascan.

The Rubascan test resulted from work Dorsett has done at the University of Tennessee Center for Health Sciences in Memphis where he is a faculty member. According to Dorsett, he wanted a study for immunity which was quick, reliable, simple and involved a minimum of machinery.

The Rubascan concept involves plastic beads coated with rubella virus proteins. When the beads are mixed with either serum or blood plasma, the beads will clump together if the individual is immune. If the individual is not immune, the beads remain dispersed.

Another advantage of Rubascan is that it is portable, and can be carried to people in areas where health delivery is poor.

Palmer A. Dalesandro has been appointed to head the computer center of the Bowman Gray/Baptist Hospital Medical Center.

He holds the titles of vice president of Baptist Hospital and associate dean of the medical school for information services.

He comes to the medical center from Maryland, where he was manager of information services at the Baltimore Airfoil Co., Inc., a subsidiary of Merck and Co., Inc.

In his new position, he will administer the computer center and will promote the development of computer technology.

Three Bowman Gray faculty members have been presented Faculty Foreign Travel Awards to support their participation in international meetings this summer.

They are Dr. Jon S. Abramson, assistant professor of pediatrics; Dr. M. Gene Bond, assistant professor of comparative medicine; and Dr. William D. Wagner, associate professor of comparative medicine.

The awards are made on the basis of the scientific merit of the faculty member's work and the potential of his-her proposed travel for career development.

Abramson will present a paper during the Second International Symposium on Infections in the Im-

munocompromised Host at Sterling University in Scotland.

Bond and Wagner both will speak at the 6th International Symposium on Atherosclerosis in West Berlin. Wagner also will present a paper in Berlin during a meeting on Arterial Wall Connective Tissue and will participate in the International Conference on Chromatography and Mass Spectrometry in Biomedical Sciences in Bordighera, Italy.

Dr. Michael L. Barringer, house officer in surgery, has received the "Best All-Around Presentation Certificate" in the Gold Medal Forum at the Southeastern Surgical Congress. The paper, entitled "Effectiveness of High-Frequency Jet Ventilation in Management of an Experimental Bronchopleural Fistula," was written by Barringer and by Dr. Jesse Meredith, professor of surgery; Dr. Donald S. Prough, assistant professor of anesthesia; Dr. Robert L. Gibson, associate professor of anesthesia; and Rick Blinkhorn, fourth-year medical student.

Dr. A. Robert Cordell, professor of surgery (cardiothoracic), has been elected president-elect of the Southern Association for Vascular Surgery.

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Dr. Frank R. Johnston, professor of surgery (cardiothoracic), has been elected president-elect of the Southern Surgical Congress.

Dr. George D. Rovere, associate professor of orthopedic surgery, has been re-appointed to a three-year term on the Sports Medicine Advisory Commission by the Superintendent of the North Carolina Department of Public Instruction.

Dr. Velma G. Watts, instructor in medical education and director of the Office of Minority Affairs, has been appointed a member of the North Carolina Health Manpower Advisory Council. The council's purpose is to provide support services to the North Carolina Health Manpower Development Program.

University of N.C. School of Medicine & N.C. Memorial Hospital

North Carolina Memorial Hospital has opened a new 19-bed neurosurgery unit.

"For the first time, all neurosurgery patients except children and those involved in research programs will be in one area," said Dr. Stephen Mahaley, chief of neurosurgery. "This will enable us to expand our treatment capacity and provide care more efficiently."

With the opening of the new unit, the hospital's total inpatient capacity has been increased by eight.

Patients are referred to N.C. Memorial's neurosurgery service by physicians all over the state, and the number of patients treated has increased sharply in recent years. The number of neurosurgery operations performed here went from 280 in 1974 to 625 last year. During that same period, neurosurgery outpatient visits increased from 1,100 to 2,800.

Mahaley said the new unit is needed because of the rapid expansion of neurosurgery services in the past few years. Among the new services are: arterial bypass surgery for stroke victims; an innovative technique for removing pituitary gland tumors; implanting electrodes in the brain or spinal cord to relieve severe pain, particularly in cancer patients; treatment of children with hydrocephalus and severe birth defects; and combinations of radiation therapy, chemotherapy and immunotherapy for people with brain tumors.

The nurses in the neurosurgery unit go through an extensive internship program in which they receive special training in assessing neurological problems. They are experienced in working with both acute care and intensive care patients.

"This unique training program will not only be good for the nurses' professional development," Mahaley said, "but should result in better care and more continuity of care for our patients."

Dr. James F. Newsome, a member of the Department of Surgery since 1956, was presented the Distinguished Faculty Award at the annual awards banquet of the Medical Alumni Association April 4.

Newsome, professor of surgery, received the award from Dr. Shahane R. Taylor, president of the Medical Alumni Association.

Taylor cited the extensive impact of Newsome's teaching and his active involvement in the prevention and treatment of cancer.

"Dr. Newsome has been active in the education of medical students and housestaff," Taylor said, "as well as continuing medical education programs. He was instrumental in the development of a clinic for cancer and a computerized cancer data bank."

Newsome received an A.B. and a Certificate in Medicine from UNC-CH and his M.D. from Vanderbilt University. He specializes in surgical oncology with a particular interest in benign and malignant breast diseases.

Dr. Avram Gold, a member of the UNC-CH Cancer Research Center, is investigating how the molecular structure of certain compounds can be used to predict whether those compounds might cause cancer. The research may enable scientists to predict on the basis of molecular structure whether or not a given chemical can be metabolized into a carcinogen in the body.

"Basically," Gold said, "what I'm trying to do is relate the structure of xenobiotic compounds — compounds from the environment — to carcinogenic activity."

"It is now known that a large proportion of compounds shown to be carcinogenic must be activated by metabolism, and that a particular enzyme, Cytochrome P450, is largely responsible for this activation by the addition of an oxygen atom to the compound in question."

"This study will focus on the mechanism by which the oxygen transfer takes place."

More specifically, Gold explained, the study will seek to deduce the detailed steps by which the enzyme works.

"Knowledge of the detailed mechanism of the enzymic reaction will provide the basis for prediction of the metabolic products of any chemical compound," he said, "based on its molecular and electronic structure. The possibility of metabolism of any specific compound to unstable, biologically active products would, in turn, be recognized."

"The ability to predict biological activity reliably will make possible screening of new and untested chemicals for carcinogenicity by reducing the number that must be subjected to rigorous testing by various bioassay tests."

The two-year study began Jan. 1 with \$120,000 in American Cancer Society funding. Gold also is principal investigator of a second, related project, funded by a \$136,000 grant from the National Institutes of Health.

"In the NIH project," he said, "we are trying to draw inferences on how the enzyme functions by identifying the products resulting from metabolism of our synthetic molecules.

"We hope that the complementary approaches to understanding mechanisms of bioactivation will speed progress in the area of structure-activity relationships."

An assistant professor of environmental sciences and engineering in the UNC-CH School of Public Health, Gold will collaborate in his research with colleagues both at the university and the genetic toxicology branch of the U.S. Environmental Protection Agency.

Dr. Russell F. Christman, chairman of the Department of Environmental Sciences and Engineering, noting that Gold had received grants from both the primary agencies funding cancer research, called that funding a reflection of the work being done by UNC-CH faculty members.

"The proliferation of synthetic chemicals that inevitably accompanies technological progress will lend increasing urgency to research on mechanisms of activation of mutagenic and carcinogenic compounds," he said. "Environmental sciences and engineering is

looking forward to being able to make a significant contribution to basic research in this field."

John H. Schwab, professor of bacteriology and immunology, was one of four University of North Carolina faculty members to be appointed Cary C. Boshamer professors.

The professorships honor industrialist and philanthropist Cary C. Boshamer, a UNC-CH alumnus and trustee who died in 1973.

Schwab has been involved in numerous research projects, including a study, at the Institute for Experimental Gerontology in the Netherlands, of how bacteria influence aging. He conducted the study after being named a faculty scholar for 1975-76 by the Josiah Macy Jr. Foundation.

In 1968-69, he was visiting scholar at the Rheumatism Research Unit in Taplow, England, and in 1967 he was awarded an NIH fellowship to study at the Lister Institute of Preventive Medicine in London, England.

He received his B.A., M.A. and Ph.D. degrees from the University of Minnesota. He is a member of the American Society of Microbiologists, the American

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Association of Immunologists, the Association for the Advancement of Science and Sigma Xi scientific honorary society.

Gustavo S. Montana, professor and director of radiation therapy division, attended the American Radium Society meeting and presented a paper titled, "Carcinoma of the Cervix Stage IB: Results of Treatment with Radiation," at the Sixty-fourth Annual meeting, March 17, in San Antonio, Texas.

Co-authors of the paper included Drs. Wesley C. Fowler, Mahesh A. Varia, Leslie A. Walton and Mark Kirsch, and Bonnie McCafferty, M.S., of the Departments of Radiology and Obstetrics and Gynecology. The program stressed the multi-modality aspects of cancer management and new approaches.

Robert McLelland, professor of radiology, was on the faculty of the 20th National Conference on Breast Cancer. He presented papers titled, "Can Mammography Predict Breast Cancer Risk?" and "Breast Cancer Development as seen by the Radiologist." He also held a workshop titled, "Mammography Workshop for the Non-Radiologist"; and moderated "Panel 3 — Diagnosis," held at the Hyatt Regency Hotel on March 15-19 in New Orleans.

Frederic B. Askin, director of surgical pathology at North Carolina Memorial Hospital and professor of pathology in the School of Medicine, is the co-author with Anna-Luise A. Katzenstein, M.D., of Washington University in St. Louis of a book titled *Surgical Pathology of Non-Neoplastic Lung Disease*. The book is Volume 13 in the series titled *Major Problems in Pathology* whose consulting editor is James Bennington, M.D.

**East Carolina University
School of Medicine**

Dr. Edwin W. Monroe, senior associate dean at the East Carolina University School of Medicine, has also been appointed executive director of the Eastern Area Health Education Center.

Monroe is assuming responsibilities formerly held by Dr. F. M. Simmons Patterson, who retired last December after directing Eastern AHEC and the medical school's Office of Continuing Medical Education since those offices were established in the mid-70s.

Patterson intends to continue to reside in Greenville and will serve the medical school and Eastern AHEC programs as consultant for continuing medical education.

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Monroe was instrumental in the development of the regional AHEC program. He was president of the Eastern AHEC board of directors from 1974 until accepting the appointment as executive director.

John C. Blanton, president of the Eastern AHEC board of directors, has assumed the responsibilities of acting president.

Eastern AHEC is responsible for 23 counties in Eastern North Carolina, the largest geographic area served by a single AHEC in the state. East Carolina University is the primary university affiliate of the Eastern AHEC.

Dr. Samuel S. Spicer has been named assistant professor of emergency medicine.

Spicer formerly was emergency room physician at Broward General Medical Center, Fort Lauderdale, Fla. He has also been an emergency physician in Eustis, Va., and Gloucester, Va.

He received his undergraduate degree from Emory University and his medical degree from the Medical University of South Carolina. He completed residency training at the Bowman Gray School of Medicine and the Medical College of Virginia.

Several faculty members from the School of Medicine presented their research studies at the 66th Annual Meeting of the Federation of American Societies for Experimental Biology held April 15-23 in New Orleans.

Department of Pharmacology faculty member Dr. S. Jamal Mustafa, associate professor, and Dr. Abdallah O. Askar, research associate, presented two papers to the federation. The papers are entitled "Effect of Magnesium on the Adenosine Induced Relaxation of Bovine Coronary Arteries" and "Effect of Calcium Antagonists on the Adenosine Induced Relaxation of Bovine Coronary Arteries."

Dr. M. Saeed Dar, instructor, and Dr. Wallace R. Wooles, professor and chairman of the Department of Pharmacology, also attended the meeting and presented "Changes in Dopamine (DA), DA-Metabolites, Norepinephrine (NE) and GABA in Specific Brain Areas of Ethanol Dependent Mice."

Five members of the Department of Physiology also traveled to New Orleans for the federation meeting and presented two poster sessions.

A session entitled "Hemodynamic Events and Metabolic Factors During Exposure of Rats to Oxygen at High Pressure" was presented by Dr. David L. Beckman, professor, Dr. S. Gregory Iams, assistant professor, and Dr. John C. Yeager, assistant professor.

Dr. G. Richard Athey, assistant professor, Dr. Beckman, and Dr. Daniel J. Crittenden, research associate, presented a session studying "Gastric Stress Ulceration During Exposure to Oxygen at High Pressure."

Dr. Alvin Volkman, professor of pathology and laboratory medicine, and research associate Dr. Nan-chi

A. Chang, also from the Department of Pathology and Laboratory Medicine, presented a paper at the meeting entitled "Mononuclear Phagocyte Formation Following Bone Marrow Depression with 89 Strontium."

Chang collaborated with Dr. J. Y. Alice Chang, research associate in the Department of Microbiology, and presented a paper entitled "Partial Characterization of a Crystallizable Secretory Protein (CSP) Synthesized by Activated Murine Peritoneal Macrophages."

Three members from the medical school's Department of Anatomy also attended the meeting. Dr. Hubert W. Burden, professor, presented research on the "Extrinsic Sensory Intervention of the Rat Ovary."

Dr. Thomas M. Louis, associate professor, and Dr. Lamar T. Blankenship, research associate, made a presentation entitled "Maternal Plasma Estrogen and Progesterone Profiles During Pregnancy and Neonatal Physical Measurement in *Dolichotis Patagona* Mara."

Dr. Zubie W. Metcalf, director of the Center for Student Opportunities, recently received two grants.

The National Fund for Medical Education awarded a \$23,670 grant for a special summer program for medical students and the Public Health Service provided a \$4,500 grant for a minority high school student research apprentice program.

Dr. Paul D. Mozley, professor of obstetrics and gynecology, attended the 13th Annual American College of Obstetrics and Gynecology conference held April 24-29 in Dallas.

During the meeting, Mozley presented a paper for discussion entitled "Recto-Vaginal Fistulae: Causes; the Effect on Doctor-Patient Relationships; the Effect on Living; and Surgical Repair." Mozley also presented a workshop on the "Emotional Parameters of Infertility."

In addition, Mozley recently was appointed to the steering committee of the American Society of Psychosomatic Obstetrics and Gynecology.

Dr. Theodore Kushnick, professor of pediatrics and director of the Developmental Evaluation Clinic, has received \$36,904 from the N.C. Department of Human Resources to support "Genetic Evaluations and Recurrence Risk Counseling of Families Suspected of Having a Genetic Condition."

In addition, Kushnick, in collaboration with Dr. Kathleen Rao, instructor of pediatrics and director of the cytogenetics laboratory, and Elizabeth A. Gettig, clinical instructor of pediatrics and genetic counselor, presented two papers at the Carolinas Genetics Colloquium held at the University of South Carolina School of Medicine. The papers were "9p Trisomy" and "Unusual Translocation Down Syndrome."

Three members of the Department of Anatomy presented papers at the American Association of Anatomy meeting in Indianapolis held during April.

Dr. Jack E. Brinn, Jr., associate professor, presented a study entitled "Spontaneous Recovery from an Alloxan Diabetes Mellitus in the Rat Due to Proliferation of B-Cells."

Dr. Hubert Burden, professor, and Dr. Irvin E. Lawrence, professor, presented "The Effects of Six-Hydroxydopamine Administration During the Prepubertal on the Guinea Pig Ovary" during a poster session.

Dr. Max C. Poole, assistant professor of anatomy, has received a \$44,680 grant from the National Institutes of Health to study the "Morphometry of Gonadotropes During Hyperprolactinemia."

The Department of Emergency Medicine sponsored

its Third Annual Emergency Medical Services Seminar at Pitt County Memorial Hospital March 27-28. More than 160 emergency care professionals from throughout eastern North Carolina attended the conference conducted by School of Medicine faculty.

Dr. Edward M. Lieberman, professor of physiology, has received a grant totaling \$16,400 from the National Science Foundation for a project entitled "Neuron-Glia Interactions at Nerve Fibers and Their Synapses." Collaborating with Lieberman is Dr. Jorge Villegas from the Venezuelan Institute for Scientific Research.

Dr. Sadhana Debnath, instructor in the Department of Biochemistry, attended the N.C. Academy of Science meeting in March and presented a paper entitled "Macromolecular Pigment-Peptides Secreted by Pseudomonad Cultured on Single Amino Acids."

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In Memoriam

THEO HOWELL MEES, M.D.

In October 1981, Lumberton, Robeson County, and the neighboring counties lost a staunch friend and physician, Theo Howell Mees. His life was given to these people through service, and his reward was their respect and gratitude.

Dr. Mees was born in Charlotte, North Carolina, on November 27, 1916, the son of the late Erich A. and Myrtle Howell Mees.

Dr. Mees graduated from Capital University, Columbus, Ohio, in 1938, and received his M.D. degree from Duke University Medical School in 1942. He served his internship at Emory University School of Medicine, Atlanta, Georgia, 1942-1943. From 1943 to 1946, he served in the Medical Corps, U.S. Army. His overseas service was in the European Theater during the Normandy invasion and the breakout from the peninsula.

Dr. Mees came to Lumberton in 1946, following discharge from the Army, to enter the practice of Internal Medicine with Dr. Frank Ward and Dr. Hugh McAllister.

In 1950-1952 Dr. Mees returned to Duke University Hospital to complete his residence training in Internal Medicine. In 1955 he became a Diplomate of The American Board of Internal Medicine.

From 1952 until the time of his death in 1981, he served as Chief of Staff, Chief of Medicine, and all offices available at Robeson County Memorial Hospital and Southeastern General Hospital. He served as president of the Robeson County Medical Society in 1957 and on many committees for the North Carolina Medical Society.

"Bud" Mees was loved by many, respected by all, and admired by his fellow physicians. His early training was under Dr. Eugene Stead, who permanently imprinted his life with a sense of dedication to thoroughness, self discipline, exactness, and inquisitiveness in the search for truth and perfection. Bud was a "doctor's doctor" as well as a sympathetic, compassionate, untiring servant to his patients. All his energy was spent on his practice and his family. He did not compete in the market place, but spent his time and concentration on ministering to the sick and providing for the welfare of his family and loved ones.

In his final illness he left a legacy of courage, fortitude, and faith to all who knew him. He graciously accepted what help could be afforded him without ever a complaint or a question as to God's wisdom, a most fitting end to a life of integrity and service.

Words cannot express our feelings toward the loss of Dr. Mees, but they are dedicated to his memory.

Dr. Mees married Rubye Ledford of Newport, Tennessee. With Mrs. Mees there survive the follow-

ing children: Theo H. Mees, Jr., Denver, Colorado, Patricia A. Mason, Raleigh, and Susan S. Heater, Raleigh. He is also survived by four grandchildren, a sister, Mrs. D. H. Elsass of Columbus, Ohio, two brothers, Thomas L. Mees of Altamonte Springs, Florida, and William A. Mees of Longwood, Florida.

JOSEPH B. ALEXANDER, M.D., F.A.C.P.
ROBESON COUNTY MEDICAL SOCIETY

HAL STANFIELD FLOYD, M.D.

On February 28, 1982, Dr. Hal Stanfield Floyd died after 35 years of medical practice in South Robeson County. His life had been devoted to the care of his patients and family.

A native Robesonian, Dr. Floyd was born on August 12, 1916, one of eleven children of the late Graddy Herring and Beulah Vista Floyd. He received his B.S. Degree from Duke University in 1939, and his medical degree from the Medical College of Virginia in Richmond in 1943.

He served an eighteen-month internship at Charlotte Memorial Hospital, Charlotte, North Carolina, before entering the United States Army as a Captain in October 1944. He was stationed with the Medical Corps in France and Belgium from January 1945 to 1946.

On January 13, 1947, he began a family medical practice in Fairmont, North Carolina. The next thirty-five years were given in service to the needs of his fellow man. In return he was admired and respected by those he served so well.

Dr. Floyd was known affectionately as "Dr. Hal" by three generations of students at Fairmont High School, where he served as the athletic team physician for many years. The high school athletic stadium is named in his honor, "The Hal S. Floyd Stadium."

In 1979 he was honored by friends for his outstanding service to the citizens of the community. In January of 1982 he was given a life membership in the North Carolina Medical Society by the Robeson County Medical Society.

The death of Dr. Floyd leaves a large void, but our memory of his tireless service, keen wit, and devotion to family, friends, and church will live on.

He is survived by his widow Mrs. Dorothy Oliver Floyd, one daughter Mrs. Jetter W. (Carol Anne) Lewis of Fairmont, three grandchildren, three brothers, W. Linwood Floyd, Harry F. Floyd, and Dr. Dan Floyd, all of Fairmont, and three sisters, Mrs. J. S. (Marie) Oliver of Marietta, Mrs. William (Lucille) McKinley of Roswell, New Mexico, and Mrs. Charles (Vista) Jackson of Shelby.

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Each Berocca® Plus tablet contains 5000 IU vitamin A (as vitamin A acetate), 30 IU vitamin E (as *dl*-alpha tocopheryl acetate), 500 mg vitamin C (ascorbic acid), 20 mg vitamin B₁ (as thiamine mononitrate), 20 mg vitamin B₂ (riboflavin), 100 mg niacin (as niacinamide), 25 mg vitamin B₆ (as pyridoxine HCl), 0.15 mg biotin, 25 mg pantothenic acid (as calcium pantothenate), 0.8 mg folic acid, 50 mcg vitamin B₁₂ (cyanocobalamin), 27 mg iron (as ferrous fumarate), 0.1 mg chromium (as chromium nitrate), 50 mg magnesium (as magnesium oxide), 5 mg manganese (as manganese dioxide), 3 mg copper (as cupric oxide), 22.5 mg zinc (as zinc oxide).

Indications: Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions, including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals; certain conditions resulting from severe B-vitamin or ascorbic acid deficiency; or conditions resulting in increased needs for essential vitamins and minerals.

Contraindications: Hypersensitivity to any component.

Warnings: Not for pernicious anemia or other megaloblastic anemias where vitamin B₁₂ is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B₁₂ deficiency who receive supplemental folic acid and who are inade-

quately treated with B₁₂.

Precautions: *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

Adverse Reactions: Adverse reactions have been reported with specific vitamins and

000,000 hospital patients with infections.⁴ Many are anorectic and may have a markedly reduced food intake. Supplements are often provided as a prudent measure because the vitamin status of critically ill patients cannot readily be determined.³

The incalculable millions on calorie-reduced diets. Patients ingesting 1000 or fewer calories per day could be at high risk because this intake may not supply most nutrients in adequate amounts without supplementation.⁵



erals, but generally at levels substantially higher than those in Berocca Plus. However, allergic and idiosyncratic reactions are possible at lower levels. Iron, at the usual recommended levels, has been associated with gastrointestinal intolerance in some patients.

Dosage and Administration: Usual adult dosage: one tablet daily. Not recommended for children. Available on prescription only.

Supplied: Golden yellow, capsule-shaped tablets—bottles of 100.

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highly acceptable to patients, has virtually no odor or aftertaste and is economical. And its "Rx only" status means more physician involvement, better patient compliance.

References: 1. Shaw S, Lieber CS: Nutrition and alcoholism, chap. 40, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME. Philadelphia, Lea & Febiger, 1980, pp. 1220, 1237. 2. Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, *op. cit.*, p. 781. 3. Shils ME, Randall HT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, *op. cit.*, pp. 1084, 1089, 1114. 4. Dixon RE: *Ann Intern Med* 89 (Part 2): 749-753, Nov 1978. 5. Committee on Dietary Allowances, National Research Council: Recommended Dietary Allowances, ed 9. Washington, National Academy of Sciences, 1980, p. 13.

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DESCRIPTION VERMOX (mebendazole) is methyl 5-benzoylbenzimidazole-2-carbamate.

ACTIONS VERMOX exerts its anthelmintic effect by blocking glucose uptake by the susceptible helminths, thereby depleting the energy level until it becomes inadequate for survival. In man, approximately 2% of administered mebendazole is excreted in urine as unchanged drug or a primary metabolite. Following administration of 100 mg of mebendazole twice daily for three consecutive days, plasma levels of mebendazole and its primary metabolite, the 2-amine, never exceeded 0.03 µg/ml and 0.09 µg/ml, respectively.

INDICATIONS VERMOX is indicated for the treatment of *Trichuris trichiura* (whipworm), *Enterobius vermicularis* (pinworm), *Ascaris lumbricoides* (common roundworm), *Ancylostoma duodenale* (common hookworm), *Necator americanus* (American hookworm) in single or mixed infections. Efficacy varies as a function of such factors as pre-existing diarrhea and gastrointestinal transit time, degree of infection and helminth strains. Efficacy rates derived from various studies are shown in the table below:

	Whipworm	Common Roundworm	Hookworm	Pinworm
cure rates				
mean	68%	98%	96%	95%
(range)	(61-75%)	(91-100%)	—	(90-100%)
egg reduction				
mean	93%	99.7%	99.9%	—
(range)	(70-99%)	(99.5%-100%)	—	—

CONTRAINDICATIONS VERMOX is contraindicated in pregnant women (see Pregnancy Precautions) and in persons who have shown hypersensitivity to the drug.

PRECAUTIONS **PREGNANCY:** VERMOX has shown embryotoxic and teratogenic activity in pregnant rats at single oral doses as low as 10 mg/kg. Since VERMOX may have a risk of producing fetal damage if administered during pregnancy, it is contraindicated in pregnant women.

PEDIATRIC USE: The drug has not been extensively studied in children under two years, therefore, in the treatment of children under two years the relative benefit/risk should be considered.

ADVERSE REACTIONS Transient symptoms of abdominal pain and diarrhea have occurred in cases of massive infection and expulsion of worms.

DOSAGE AND ADMINISTRATION The same dosage schedule applies to children and adults. The tablet may be chewed, swallowed or crushed and mixed with food. For the control of pinworm (enterobiasis), a single tablet is administered orally, one time. For the control of common roundworm (ascariasis), whipworm (trichuriasis), and hookworm infection, one tablet of VERMOX is administered, orally, morning and evening, on three consecutive days. If the patient is not cured three weeks after treatment, a second course of treatment is advised. No special procedures, such as fasting or purging, are required.

HOW SUPPLIED VERMOX is available as chewable tablets, each containing 100 mg of mebendazole, and is supplied in boxes of twelve tablets. VERMOX (mebendazole) is an original product of Janssen Pharmaceutica, Belgium.

US Patent 3,657,267
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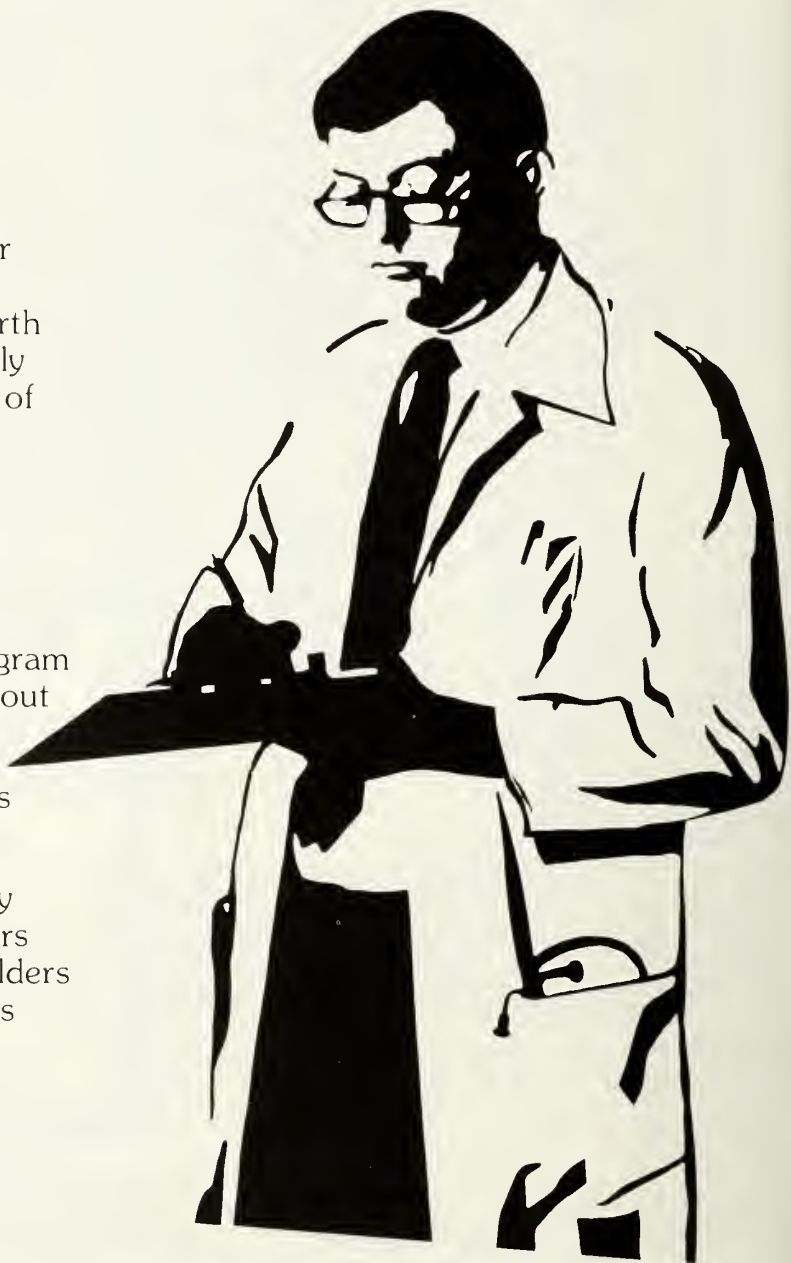
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MEDICAL JOURNAL

August 1982, Vol. 43, No. 8

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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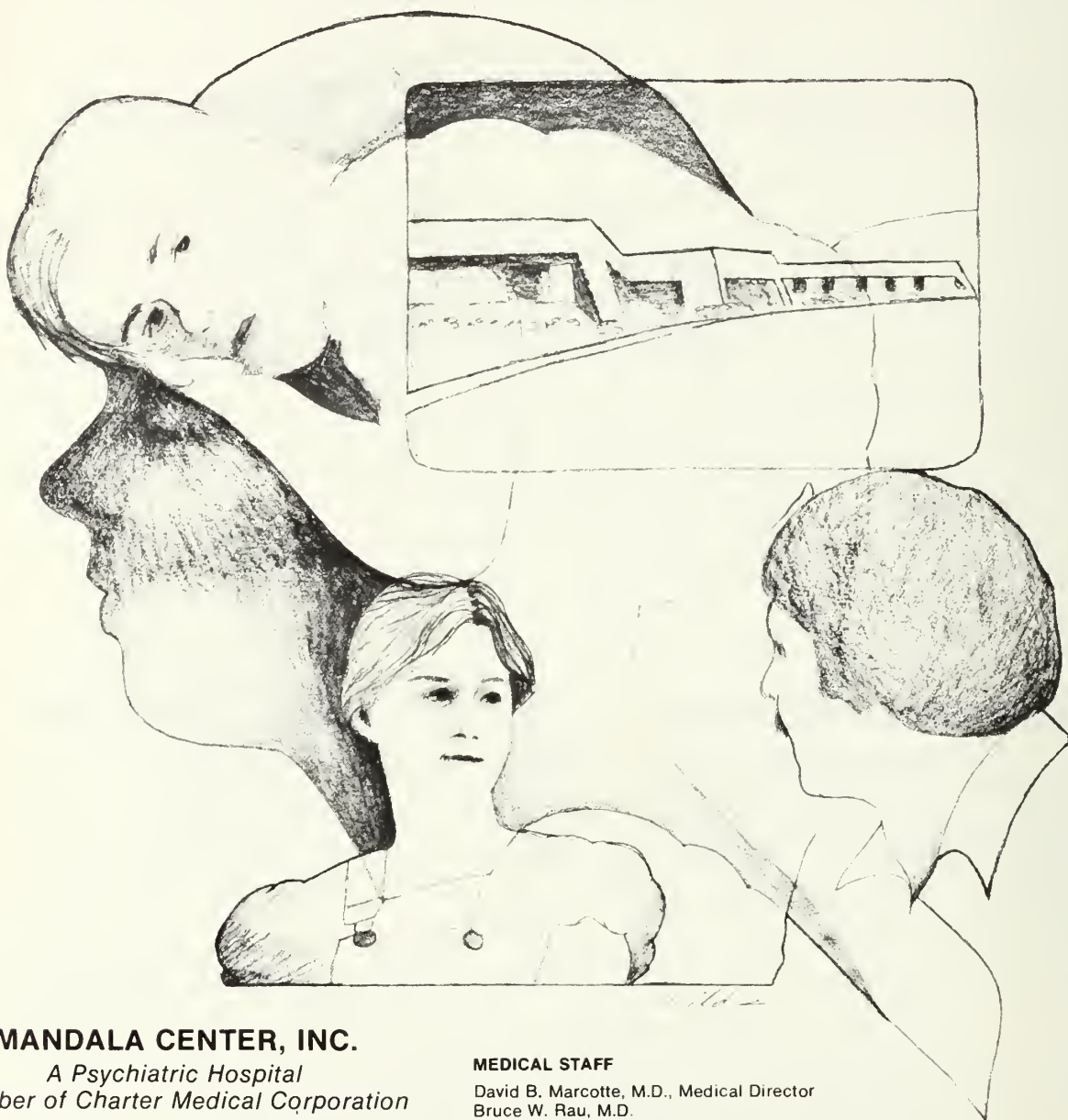
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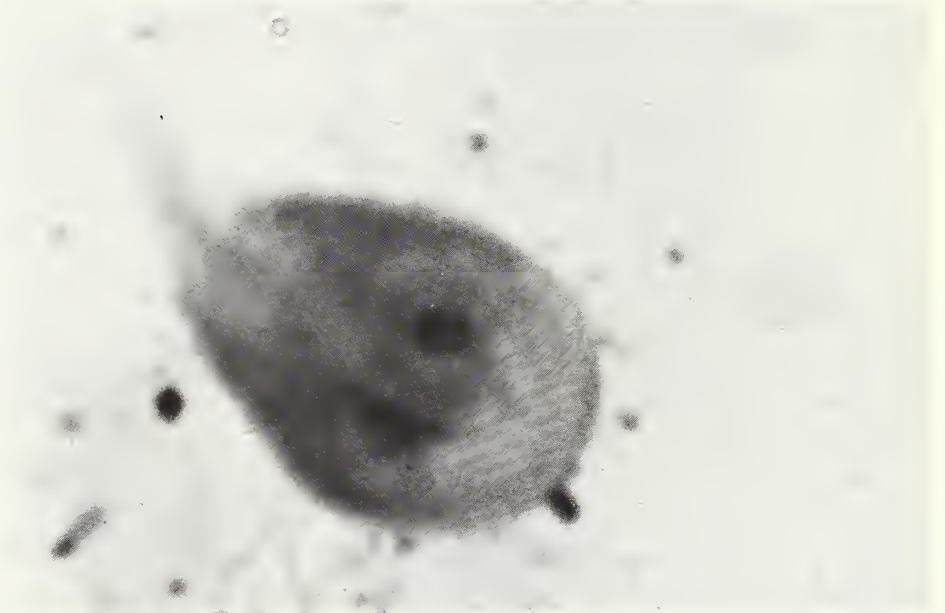
Those parasites that live primarily in the duodenum or bile ducts often are more readily seen in the duodenal contents than in the stool. These include *Giardia lamblia* (motile trophozoites), *Strongyloides stercoralis* larvae and/or eggs in advanced stages of development), *Clonorchis sinensis* (eggs), *Fasciola hepatica* (eggs), *Trichostrongylus orientalis* (eggs), and *Isospora* (coccidia).

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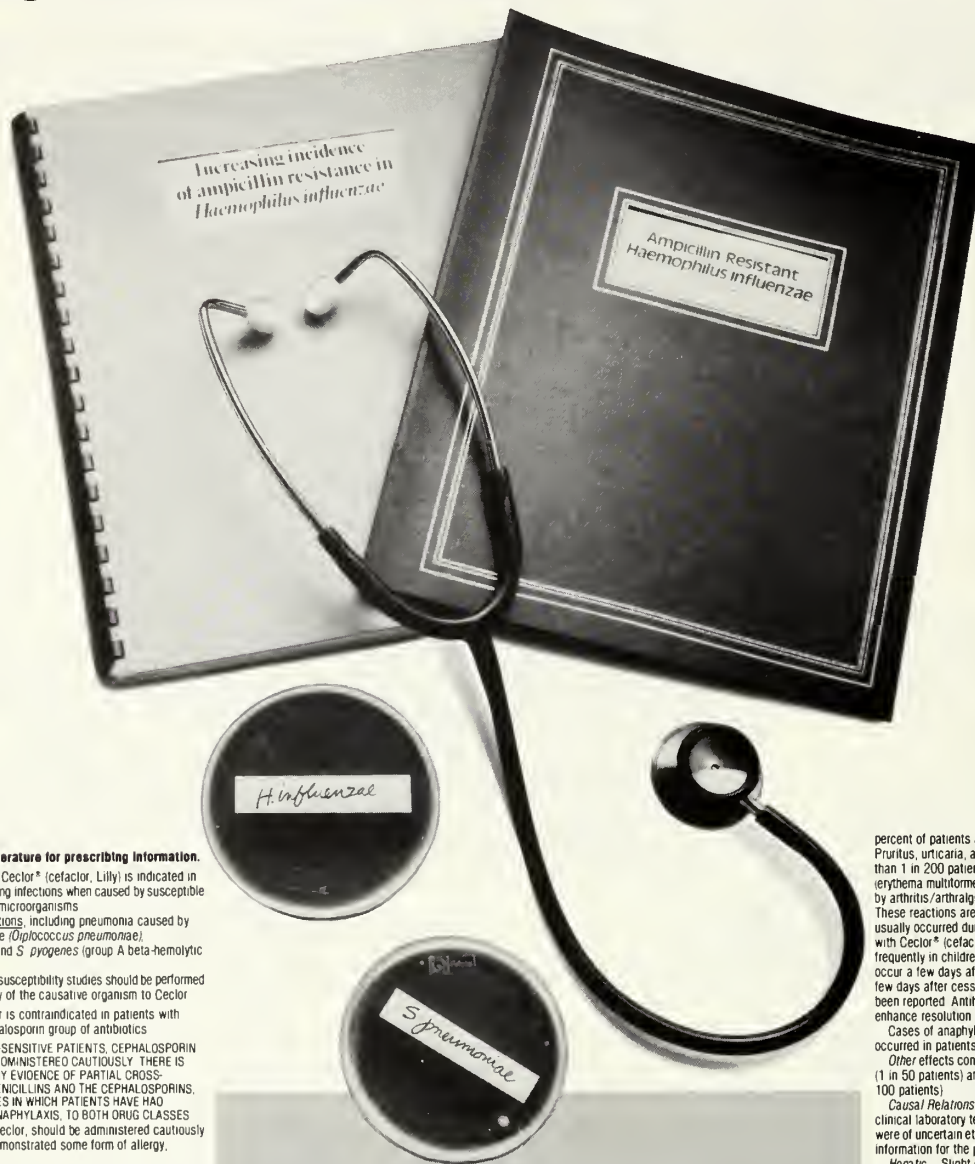


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Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

Contraindication: Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP; Lilly).

Usage in Pregnancy: Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy: Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefaclor therapy are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been reported in conjunction with therapy with Cefclor.

Hypersensitivity reactions have been reported in about 1.5

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cefclor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.⁷

Cefclor®

cefaclor

Pulvules®, 250 and 500 mg

percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthritis and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor® (cefaclor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). (1002818)

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Medical Technology: An Examination of the Advantages of Standardization and Costs of Patient Monitoring Equipment for an Anesthesia Service

Enid R. Kafer, M.D.

ABSTRACT We have examined selection and purchase of patient monitoring equipment for an anesthesia service for the operating rooms and associated areas of a tertiary medical care hospital. The effects on total cost of standardization, cost of ownership which depends on the reliability of instrumentation, cost of service and the duration of downtime, and the cost of replacement were considered. We concluded that the advantages of standardization on acceptable instrumentation and devices are overwhelming, resulting in better training, use and service, and decreased administrative costs, misuse and malpractice, and that greater attention should be paid to the quality and reliability of instrumentation, and the quality of service and long-term support by a manufacturer. Failure of standardization and purchase of poor quality instruments with unacceptable service will adversely affect both the cost of medical care and the quality of patient care. These arguments are relevant not only to patient monitoring equipment for an anesthesia service but to planning and purchasing by other services.

ADVANCES in practice have improved the safety of anesthesia and allowed the performance of complex surgery on high risk patients. These advances are dependent on technological progress and include continuous monitoring and recording of such variables as electrocardiogram, systemic and pulmonary artery pressures and measurement of cardiac output. However, the increasing cost of medical care as a result of such advances, the complexity of health care and administrative costs together with inflation have resulted in concern¹⁻³ and measures to restrain the escalation of costs.⁴ The tendency for those who develop and apply the technology and of governmental and other agencies who pay for health care to take adversarial positions makes analysis of the total costs of patient

monitoring equipment difficult.⁵ Moreover, the policy of state institutions to control costs by rate-setting programs⁴ or preference given to "low bid" substitutes short-term, low-cost solutions with long term problems for long-term, cost-effective programs (Table I). This is expressed by the phrase "pay now or pay later," which may mean pay now or pay much more later.

Long-range planning and the purchase of patient monitoring equipment for an anesthesia service for operating rooms and the associated critical care areas in large teaching hospitals demand consideration of the physiological variables to be monitored and recorded. The accuracy, resolution, frequency of response and range of measurement as well as the variables selected will depend on the current and anticipated anesthetic practice, type of surgery and the patient population. However, in order to provide cost-effective, safe, efficient and ade-

quate patient care, consideration must be given to: 1) standardization to facilitate safe and efficient use by staff, minimize cost and time of in-service training of medical, nursing, technical and clinical engineering staff, and reduce administrative and storage costs; 2) compatibility and standardization where appropriate for transducers, thermodilution catheters and other devices needed for good, cost-effective patient care; 3) reliability and low cost of maintenance during the useful life of an instrument; 4) availability of satisfactory service and parts; 5) duration of availability of components and support by manufacturer; and 6) compatibility with advances in monitoring, central station and patient data management systems.

A thorough analysis of the costs of patient monitoring equipment should include the purchase price, cost of maintenance (ownership) and replacement, together with their "hidden" professional and adminis-

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trative costs. The cost of purchasing these monitoring systems through a state purchasing system is not insignificant and therefore should, where appropriate, be included in these analyses.

Our goals are therefore to examine the arguments for standardization, and analyze the costs of ownership and replacement of patient monitoring equipment.

These considerations arose from the establishment in 1977 of an Anesthesiology Equipment Committee for the North Carolina Memorial Hospital to plan the purchase of patient care equipment for the clinical services of the Department of Anesthesiology and to achieve appropriate standardization within the operating room and non-operating room anesthesia service areas. During 1977-1981 there was a 40% expansion of the main operating suite, recovery room and associated areas; development of a critical care area adjacent to the recovery room; addition of a day-operating surgical suite with its own recovery room; expansion of the operative-delivery area (obstetrics) and the development of a burn center with facilities for anesthesia. It was therefore critical and appropriate to establish criteria of function and performance of patient monitoring equipment to fulfill our needs, for standardization and for long-range comprehensive planning.

STANDARDIZATION

While it may appear that arguments for standardization on a manufacturer's patient monitoring systems which includes compatibility with specific peripheral devices (physiological pressure transducers and thermodilution catheters) and patient data management systems are self-evident, contrary arguments have to be addressed (Tables II, III). For example, a manufacturer might assume that its product is now "standard" for an institution and no longer determines the price by the cost of manufacture or the need to be competitive. Standardization could then inhibit the free and competitive enterprise.

However, if a manufacturer's device or system fulfills specified needs,

TABLE I

North Carolina Administrative Code

Title 1

Department of Administration

Chapter 5

Purchase and Contract

SECTION 0.0300: ADVERTISED FORMAL BID PROCEDURE

0.0309 EVALUATION

In determining the award of contracts, bona fide proposals will be considered and evaluated as provided by statute and applicable rules and regulations. Non-acceptance of a proposal is not to be construed as an outright rejection or that it lacks merit but that another is deemed advantageous Page 5-11.

Statutory authority G.S. 143-52, 143-49

Effective February 1, 1976

Readopted effective February 27, 1979

SECTION 0.0500: REJECTION OF BIDS

0.0501: BASIS FOR REJECTION

In requesting proposals, any and all offers received may be rejected in whole or in part. Basis for rejection shall include, but not be limited to, the proposal being deemed unsatisfactory as to quantity, quality, delivery, *price* or service offered; the proposal not complying with the conditions of the institution or with the intent of the proposed contract; lack of competitiveness by reason of collusion or otherwise or knowledge that reasonably available competition was not received; "error(s)" in specifications or indication that revision(s) would be to the state's advantage; cancellation of or changes in the intended project or other determination that the proposed requirement is no longer needed; limitation or lack of available funds; circumstances which prevent determination of the lowest responsible or most advantageous bid; any determination that rejection would be in the best interests of the state.

Statutory authority G.S. 143-53; 143-53

Effective February 1, 1976

Readopted effective February 27, 1979

TABLE II

Criteria for Standardization on a Manufacturer's Patient Monitoring Systems

1. Measures and records required variables

Example: Electrocardiogram

Systemic artery pressures

Pulmonary artery pressures

Body temperature

Cardiac output (thermodilution)

Dual channel annotating recorder

2. Quality of measurement and recording

Example: Acceptable accuracy and frequency response of systemic artery pressure monitor and recorder

3. Compatibility with peripheral devices

Example: Direct compatibility of thermodilution cardiac output computers with Edwards Laboratory Swan Ganz thermodilution pulmonary artery catheters. Therefore the cardiac output can be measured in a patient in different areas (Holding Area for OR, OR, Recovery Room and Intensive Care Unit) without changing the pulmonary artery catheter because the cardiac output computers in *all* areas are compatible with the catheter. The cardiac output computer is a microprocessor having an algorithm for calculation of cardiac output from a specific type of thermodilution catheter.

Example: Compatibility with quartz type physiological pressure transducers which current evaluation demonstrates a longer life span in the operating room than the strain gauge type of transducer.

4. Quality of product and documented cost of ownership.

5. Availability of in-service training for user and clinical engineering staff.

6. Availability of replacement components for direct sale to institution and/or service with documentation acceptable to Joint Commission on Accreditation of Hospitals.

7. Duration of support by manufacturer.

Example: Availability of components and manufacture of system compatible units for 10 years from date of purchase.

Example: How long before our monitor system is obsolete?

8. Compatibility with patient data management systems.

and functions effectively and reliably and adequate technical support is provided, arguments for standardization are overwhelming (Table II, III).

Familiarity with function where maximal time should be spent with patient and minimal time with machine: In many anesthesia services patient care is provided by attending staff, residents and certified registered nurse anesthetists in the operating rooms and by nursing staff in recovery rooms. All must be familiar with the calibration, use and "trouble shooting" of monitoring equipment. However, the presence of a variety of equipment, and of different models makes familiarity with such equipment difficult. Supervision is impeded by the delivery of anesthesia service at separated sites within one institution. Nevertheless, in order to function efficiently the staff must prepare and use monitoring equipment and care for the patient simultaneously. The risk of improper patient care and of malpractice is increased as a result of unfamiliarity with patient care equipment.

Time effective user training programs: Time spent by physicians, clinical engineers, nursing supervisors and manufacturers' field service engineers and users participating in training programs will increase in proportion to the variety and type of equipment in use. The quality and efficiency of patient care and job satisfaction depend on the competence of the staff in using equipment. On the other hand, unfamiliarity with equipment will reduce the quality and effectiveness of patient care, contribute to the lack of job satisfaction and aggravate the serious shortage of nursing staff.⁶

Efficiency of clinical engineering staff: Standardization of monitoring equipment will reduce the time and cost of training and supervision of clinical engineering technicians, improve their efficiency and reduce the dollars and space required for replacement components.

Minimizing hospital administrative costs: Standardization reduces the number of different instruments, accessories, replacement components and consumables, and reduces administrative costs, errors

TABLE III
Standardization Advantages

- A. USER
 - 1. Familiarity with function, calibration and controls
 - 2. Recognition of malfunction
 - 3. Minimization of misuse
 - 4. Minimization of malpractice
 - 5. Availability of functional instrumentation with correct accessories and consumables
 - 6. Time effective user training programs
 - 7. Job satisfaction
- B. CLINICAL ENGINEERING
 - 1. Minimization of user errors
 - 2. Optimization of quality and efficiency of preventive maintenance and repair
 - 3. Minimization of dollar value and storage of components
 - 4. Minimization of downtime
 - 5. Dollar value based reduction in partial or comprehensive extramural service contracts
 - 6. Time effective training programs
 - 7. Job satisfaction
- C. HOSPITAL ADMINISTRATION: PURCHASING, RISK MANAGEMENT AND LEGAL
 - 1. Reduction in administrative, user and clinical engineering time and facilities in preparation of specifications and requisitions
 - 2. Reduction in errors, dollar value and storage of accessories, components and consumables
 - 3. Dollar value discount purchases of standardized consumables, accessories and components
 - 4. Minimization of downtime and therefore of planned "redundancy" in instrumentation and/or reduced operating room utilization
 - 5. Reduction in problems of misuse and malpractice
 - 6. Maintenance of optimal operating room efficiency and utilization
 - 7. Maintenance of good employee morale and reduction of staff shortages
 - 8. Maintenance of patient satisfaction, and good community relations
- D. PATIENT
 - 1. Safe instrumentation
 - 2. Competent-user
 - 3. Availability of operating room
 - 4. Availability of material support for optimal patient management
 - 5. Minimization of patient charges

in ordering, receiving, distribution and shortage. Standardization should also facilitate dollar value based discount on purchases. Purchase of the wrong accessories and consumables seriously impairs cost effective patient care. Similarly standardization should minimize the time spent in preparation and documentation for hospital administration and state purchasing systems.

The goals of standardization are to provide efficient and high quality patient care, minimize risk of malpractice, maximize effectiveness of training programs, and to minimize service, administrative and malpractice insurance and legal costs. These can be met if the instruments function as required for patient care, and manufacturer support is readily available. The ultimate beneficiary of standardization is the patient who

is managed by competent staff using safe instrumentation in an efficient operating room.

COSTS OF PATIENT MONITORING EQUIPMENT

The cost of patient monitoring equipment includes the purchase price, cost of ownership, and cost of replacement, together with their attendant professional and administrative costs (Table IV).

Cost of ownership: Although the purchase price of capital equipment receives the greatest scrutiny, the cost of maintenance together with the effect of unsatisfactory equipment on the quality and efficiency of patient care should receive closer examination. To illustrate this cost of maintenance the data presented in Table V have been modified from an actual bid for patient monitoring

TABLE IV

Analysis of the Cost of Patient Monitoring Systems

1. Purchase price
2. Ownership: material and personnel
 - a. Preventive maintenance and repair
 - b. Consumables, accessories and transducers
 - c. Absence of appropriate standardization
3. Cost of premature replacement

Factors:

 - Inadequate standardization
 - Unreliable equipment
 - Failure of manufacturer to provide service/components
 - Failure of manufacturer to provide long-term support
 - Incompatibility with advances in monitoring, transducers and patient data management systems

systems for intensive care units of a county hospital system near a large city. The costs of maintenance were based on the service contract quoted by each manufacturer. The range and coefficient of variation (SD as percent of mean) of purchase price and cost of maintenance are wide but there is an approximate inverse relationship between the purchase price and the cost of ownership and as a result the total price (purchase price plus cost of service for 3-5 years) had a smaller coefficient of variation. In other words, "pay now or pay later." However, the real cost of ownership of unreliable equipment exceeds that estimated from service contracts and may include: 1) institutional maintenance or external service contracts which will increase because of the effect of inflation on salaries, fringe benefits, travel and spare parts. (Institutional maintenance or service contracts will therefore consume an *increas-*

ing and unpredictable proportion of an institution's revenue); 2) administrative and professional staff and potential legal costs; 3) impairment of the efficiency of an operating room and of the performance of staff in the management of patients; 4) deterioration of the quality of patient care and teaching of residents and other staff; and 5) postponement of surgery with increasing cost to patient and society, or transfer to another institution.

Availability of technical training, parts and service. Many hospitals, particularly those with more than 400 beds, have clinical engineering departments⁷ which provide preventive maintenance and repair patient monitoring equipment. The availability of technical training by the manufacturer for clinical engineering staff and of parts for direct sale to the institution are essential. However, the maintenance of a competent clinical engineering depart-

ment in a hospital may not be cost effective or the department may not be able to provide adequate service. In spite of growing interest in clinical engineering, the ability of their technical personnel to provide service is frustrated by insufficient staff for the total workload, failure of standardization, inadequate training, insufficient space and the failure to provide service at night, on weekends and during vacations. These problems are compounded by the increasing sophistication of equipment.

Therefore, there is growing recognition of the importance of quality and cost of partial or comprehensive service contracts by the manufacturer.

Nevertheless, manufacturers vary substantially in the quality and reliability of service, the availability of parts and the adequacy of in-house instruction for clinical engineers. The range of quality of service reported in the above example was from a telephone answering service to 24-hour availability of engineers competent to repair patient monitoring equipment with adequate supply of parts. The vendor with the answering service would not guarantee the availability of a competent technician in less than 24 hours from the time of the request for service. In addition, a manufacturer or vendor may "promise" adequate service and/or the availability of parts but fail to meet expectations. Medical equipment manufacturers are not alone in such failures.⁸ There-

TABLE V:

Analysis of cost of patient monitoring equipment including purchase price, cost of maintenance and repair* and cost of administration of maintenance and repair to an Institution for five years of ownership

Manufacturer	Cost of Maintenance and Repair Service Contract								10% Adminis- tration Cost of Maintenance and Repair	Total Cost \$ K
	Purchase Price \$ K	Year 3		Year 4		Year 5		Cost of M and R 3-5 Years \$ K		
		% Purchase Price	\$ K	% Purchase Price	\$ K	% Purchase Price	\$ K			
A	584	36.8	6.3	36.8	6.3	36.8	6.3	110.4	11.0	705.4
B	547	42.7	7.8	42.7	7.8	53.1	9.7	138.5	13.9	699.4
C	737	21.4	2.9	22.9	3.1	24.3	3.3	68.6	6.9	812.5
D	594	44.6	7.5	48.1	8.1	51.7	8.7	144.4	14.4	752.8
E	654	26.2	4.0	29.4	4.5	32.7	5.0	88.3	8.8	751.1
MEAN	623	34.3	5.7	36.0	6.0	39.7	6.6	110.0	11.0	744.2
SD	74	10.2	2.2	10.1	2.1	12.4	2.6	32.3	3.2	45.5
CV%	11.9	29.7	38.0	28.0	35.7	31.3	39.8	29.4	29.3	6.1

*Cost of maintenance and repair based on each manufacturer's service contract for the specified monitoring equipment. The analysis assumes a two-year warranty.

fore, a manufacturer's "track record" should be a major factor in evaluation of equipment.

COST OF REPLACEMENT

As a result of the need to measure more variables in critically ill patients, monitoring equipment may have to be replaced sooner than contemplated if the required information cannot be obtained. Measurement must be accurate and monitoring and recording should have acceptable frequency response. Replacement may also be required because of high cost of maintenance and repair, non-compatibility with other devices or with patient data management systems or because the manufacturer has discontinued the model and will no longer provide support ("premature replacement").

Therefore, to demonstrate the high costs of replacement of basic patient monitoring equipment for an anesthesia service in a 16-room operating room at a tertiary institution five years after purchase the replacement cost was examined. We conservatively estimated the cost in 1980 to be \$500,000, added 10% administration and associated costs and applied the current inflation rate of 12.5%. The administrative and associated costs include professional, clinical engineering, administrative, clerical staff time and facilities required to review available monitoring systems, preparation of justification and specifications for requisitions and examination of bids. These costs if properly assessed may exceed the estimated 10% of the purchase price. Based on the inflation rate of 12.5% and not including technical advances and requirements as a result of changing

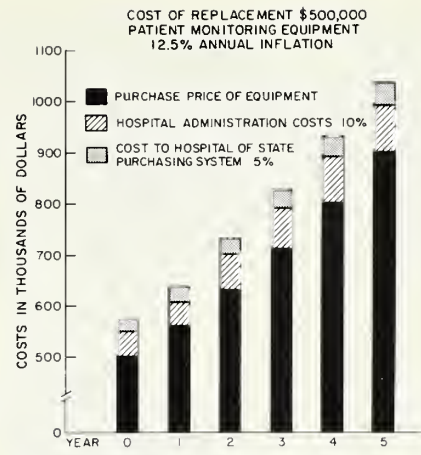


Figure 1: "Cost of replacement of \$500,000 patient monitoring equipment after five years of use with an annual inflation rate of 12.5%. The total cost includes purchase (solid), administrative costs estimated as 10% of purchase price (striped), and purchase through state purchasing system (5%) (dotted)." The purchase price does not include increases due to technical advances or increased functional and performance requirements as a result of advances in patient care or changes in the institution's patient population or surgical practices. Basic patient monitoring equipment for an anesthesia service in a 16 room operating suite in a teaching hospital may be estimated to cost \$400,000-\$500,000 in the 1980-1981 fiscal year.

anesthetic practice or patient population, the total purchase price of patient monitoring equipment increased by 82% from \$550,000 to \$1,001,000 over a period of five years (Fig. 1). It is self evident that proper and effective long-range planning is required to minimize the escalating costs of medical care.

Additional costs arise in certain state institutions where purchases must be made through a state office of purchase and contract. Although the problems and the associated costs of such a system vary between states, between institutions within a state, and between types of equipment and date of purchase, these

processes may impose additional administrative and other costs. We estimated these costs to average 5% of the purchase price (Fig. 1). However, under some circumstances it may far exceed 5% and be associated with the expenditure of a very substantial amount of faculty, administrative and support staff time to prepare documentation and negotiate with a state purchasing system. This results in a reduction or abolition of the cost effectiveness of the state purchasing system. However, the problems of purchase through a state purchasing system are further aggravated by emphasis on "low bid," refusal to recognize the overwhelming importance of standardization, and the difficulty of validating the poor quality of the manufacturer's products or service performance or nonavailability of parts during the preceding decade. There is an urgent need to place greater emphasis on the total costs of patient monitoring equipment which, in addition to purchase price, includes service, lack of parts, poor performance and unreliability of the product and the manufacturer or vendor, and all the associated administrative and professional time and effort and secretarial support facilities.

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GALEN [fl. 2nd Cent.]

Hunger is not a fitting reason to fill one's belly greedily and to excess, nor does thirst justify draining the whole cup in a single gulp. . . . be on our guard in order that we may take less to eat than those who are dining with us and that we may keep away from the dainty foods while we eat the healthful foods in moderation.

De Cognoscendis Curandisque Animi Morbis, Ch. 6 (tr. by P. W. Harkins as *On the Passions and Errors of the Soul*)

A New Approach To Evaluating Impotence in Outpatients

L. E. Wesson, M.D., R. P. Sessions, P.A., and F. A. Fried, M.D.

ABSTRACT An outpatient evaluation for distinguishing between organic and psychogenic impotence has been developed. It involves a detailed psychosocial history, and penile monitoring using a newly developed paper device as well as a conventional tumescence monitor while the patient is viewing sexually explicit materials. The results in more than 20 patients indicate that this evaluation can be reliably accomplished in an outpatient setting.

AS a new openness concerning sexual matters has developed in society, more patients with sexual problems are feeling freer to discuss these with physicians. Urologists are seeing many of these patients. Because it has become apparent that many sexual problems have an organic basis, an accurate, simple approach for determining the etiology of these problems is needed now more than ever.

The traditional approach to the workup of patients experiencing impotence has relied on some techniques which require hospitalization.^{1,2} An example is the mercury strain gauge method of detecting nocturnal penile tumescence, which requires two to three nights of inpatient monitoring.³ A portable tumescence monitor is available for at-home use⁴ but obviously can be used only with reliable patients. Barry⁵ has recently developed a technique for detecting nocturnal tumescence using a band of stamps placed around the penis. Some other new techniques are invasive and not available to all urologists, such as pelvic arteriography,^{6,7} bulbocavernosus reflex latency time,⁸ and penile plethysmography.⁹ Evalua-

tions tend to be costly to the patient. In addition, there is no technique available to objectively determine firmness of erection, a factor which may be important in assessing severity and etiology.

Herein is described a method of evaluation which we find satisfies the following objectives:

- (1) It can be done in an outpatient setting;
- (2) It is relatively inexpensive;
- (3) It involves no invasive techniques;
- (4) All techniques used are available to most urologists;
- (5) It allows assessment of the firmness of erections.

METHODS

Patients were obtained by referral from other physicians or self-referral. Controls were healthy males who applied for entry in the study in response to advertisements placed in local newspapers. Informed consent was obtained. All studies were performed by the investigators themselves. We proceeded from the standpoint that psychogenic as well as organic etiologies should be sought, and that all organic impotence is mediated through either neurologic, vascular, endocrine, or genital systems.¹⁰⁻²¹

The history taken from each patient is comprehensive.²² Questions about the symptom itself are asked,

such as: onset and progression, any precipitating factors, description of presence and firmness of the morning erections. The presence of erection with masturbation, while viewing erotic material, or during sexual activities with other partners is also ascertained. Information concerning libido, ejaculatory function, and sexual problems of the partner^{22,23} is additionally obtained. A full medical history is taken, including illnesses, medications, surgery, trauma, psychiatric history, and habits (tobacco, alcohol, drugs), and a full review of systems is obtained. An extensive social history is taken, with questions specifically about childhood (parents, siblings, religion, significant events), adolescence (onset of nocturnal emissions, masturbation and sexual activity), and adulthood (present sexual relationship, sexual orientation, self-image, and work pressures).

A complete physical examination is performed with emphasis placed on the vascular system (fundoscopic exam, distal pulses and bruits, extremity hair, and detection of aortic aneurysm), neurologic systems (sensory, motor and reflex function in the lower extremities and saddle areas, including bulbocavernosus reflex, and detection of spinal deformities), endocrine system (hair distribution, gynecomastia), and genital system (detection of corpo-

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real plaques, prostate tenderness, and testicular size and consistency). During the exam, simultaneous brachial and penile systolic pressures are measured (the latter using a digital cuff about the penile shaft and 5.3 MHz Doppler stethoscope over the dorsum of the glans)²⁴ (Fig. 1).

Screening laboratory studies include urinalysis, spot serum glucose, and serum testosterone. Later, glucose tolerance and liver function tests may be performed and pituitary hormone levels and creatinine obtained if indicated.^{17,25,26}

Diagnostic tests include detection of penile tumescence during exposure to sexually provocative materials (henceforth called provocative testing). This is accomplished by use of the strain gauge tumescence monitor* with placement of one lead at the base and one at the corona of the penis, and placement of a newly developed paper device around the penile shaft, while the patient watches 20 to 30 minutes of a sexually explicit film. The paper strip is made of glassine paper and is placed as shown in Fig. 1 by securing at overlap with cellophane tape.

*PTM-1®, Events Systems



Fig. 1. Correct placement of paper strip and mercury strain gauges.

After viewing the film, the patient is queried to determine if the film was stimulating to him and if an erection occurred, whether it would have been adequate for intercourse.

The detection of nocturnal erections was accomplished by using the

paper device described above. The investigator has previously instructed the patient how to correctly affix the paper device during the provocative testing. He is given a detailed instruction sheet and short questionnaire, four strip devices, and a stamped return envelope. For each of three nights the patient is to use the strip and on the following morning answer three questions: (1) "Did the strip break?"; (2) "Did you awaken when the strip broke?"; and (3) "Did you have alcohol or sex prior to using strip?" After completing the three nights of tests, the patient returns the questionnaire and used strips by mail.

RESULTS

There were 10 sexually normal controls, ranging in age from 21 to 50 (average age, 35.7) and 29 patients with an age range of 22 to 74 (average 49). Detailed clinical data for each patient are shown in Table I.

Use of Overall History in Diagnostic Process

Patients were categorized as fitting into a pattern of vascular, neurologic, or psychogenic impotence

TABLE I
DETAILED CLINICAL INFORMATION FOR EACH PATIENT

Age	Preexisting Diagnosis	Symptom Complex	Pertinent Abnormal Physical Findings	Serum Testosterone Level (Normal 300-1200 ng/dl)	AM Erections	Penile: Brachial Pressure Ratio	Final Sexual Dysfunction Diagnosis ¹
34	Marital Problems Depression	Psychogenic	Small, soft testes	388	Normal	0.95	Psychogenic Impotence ²
35	None	Psychogenic	None	731	Normal	0.99	Premature Ejaculation Psychogenic Impotence
64	Hypertension Arteriosclerotic Cardiovascular Disease (Postop Coronary Artery Bypass)	Psychogenic	↓ Peripheral pulses ⁴ Pulsatile abdominal mass	616	Normal	0.87	Psychogenic Impotence Abdominal Aortic Aneurysm ³
24	None	Psychogenic	None	—	Normal	0.86	Psychogenic Impotence
65	Asthma	Psychogenic	↓ Peripheral pulses ⁴	409	Normal	0.84	Psychogenic Impotence
43	Depression Hypertension	Psychogenic	None	1017	Normal	0.71	Retarded Ejaculation Psychogenic Impotence
22	None	Psychogenic	None	817	Normal	1.0	Psychogenic Impotence
38	None	Psychogenic	Soft testes	591	Absent	1.06	Psychogenic Impotence
48	Emphysema	Psychogenic	None	—	Normal	0.80	Psychogenic Impotence

TABLE 1, (Continued)

Age	Preexisting Diagnosis	Symptom Complex	Pertinent Abnormal Physical Findings	Serum Testosterone Level (Normal 300-1200 ng/dl)	AM Erections	Penile: Brachial Pressure Ratio	Final Sexual Dysfunction Diagnosis ¹
40	None	Psychogenic	None	539	Normal	0.85	Psychogenic Impotence
47	Peripheral Vascular Disease	Vascular	↓ Peripheral pulses ⁴	889	Absent	0.73	Vascular Impotence
62	Arteriosclerotic Vascular Disease Rheumatoid Arthritis Hypertension Cerebrovascular Accident	Vascular	↓ Peripheral pulses ⁴ Surgically absent right testis	375	Diminished	0.69	Vascular Impotence ²
55	Diabetes mellitus Arteriosclerotic Vascular Disease Hypertension Obesity	Vascular	↓ Peripheral pulses ⁴	241	Absent	0.58	Vascular Impotence ²
47	Renal transplant Chronic hemodialysis	Vascular	↓ Peripheral pulses ⁴	947	Diminished	0.68	Vascular Impotence
53	Hypertension Renal calculi Depression	Vascular	None	476	Diminished	0.68	Vascular Impotence
47	Rheumatoid Arthritis	Vascular	↓ Peripheral pulses ⁴	561	Absent	0.78	Vascular Impotence
43	Atherosclerotic Cardiovascular Disease	Vascular	↓ Peripheral pulses ⁴	413	Absent	0.79	Vascular Impotence
62	Diabetes mellitus Hypertension Arteriosclerotic Vascular Disease Bilateral below knee amputation	Vascular	None	455	Diminished	0.61	Vascular Impotence
60	Rheumatoid Arthritis Urethral Stricture	Mixed	↓ Peripheral pulses ⁴	704	Absent	0.79	Vascular Impotence
57	Meniere's Disease Parkinsonism	Mixed	None	566	Absent	0.79	Premature Ejaculation Vascular Impotence Psychogenic Impotence
40	Obesity	Mixed	↓ Peripheral pulses ⁴	375	Diminished	0.79	Vascular Impotence ²
59	Depression	Mixed	↓ Peripheral pulses ⁴	474	Absent	0.0	Vascular Impotence
64	None	Mixed	↓ Peripheral pulses ⁴	519	Subnormal	0.83	Vascular Impotence
40	Diabetes mellitus Hypertension Schizophrenia Post Prostatectomy	Mixed	↓ Peripheral pulses ⁴ Weak bulbocavernosus reflex	428	Diminished	1.10	Psychogenic Impotence Neurologic Impotence
59	Post Prostatectomy	Mixed	↓ Peripheral pulses ⁴	348	Diminished	0.75	Vascular Impotence ²
51	Obesity	Mixed	None	852	Diminished	0.99	Psychogenic Impotence
56	Rheumatoid Arthritis Mild Congestive Heart Disease	Mixed	↓ Peripheral pulses ⁴ Weak bulbocavernosus reflex	61	Diminished	0.78	Endocrinologic Impotence Vascular Impotence
74	Diabetes mellitus Arteriosclerotic Vascular Disease Post TUR-P	Mixed	↓ Peripheral pulses ⁴ Absent bulbocavernosus reflex	511	Diminished	0.65	Neurologic Impotence Vascular Impotence
32	Quadriplegia	Neurologic	Absent bulbocavernosus reflex C-5 Neurologic level	469	Reflex Erections	1.20	Neurologic

¹ The diagnosis of psychogenic impotence requires history consistent with this and demonstrated erectile ability by nocturnal strips or provocative test.

² Given trial of methyl testosterone with no improvement in impotence.

³ After aorto-iliac surgery, patient now has no morning erection, penile:brachial pressure ratio of 0.75, and no nocturnal erections by paper strip study.

⁴ Peripheral pulse: popliteal, dorsalis pedis and posterior tibial arteries.

on the basis of the following criteria:

Vascular — gradual progression of decreasing firmness of erection, generally associated with other vascular symptoms.

Neurologic — intermittent progression of decreasing firmness of erection or of periods of such, or any known neurologic injury or disease associated with other neurologic deficits. These two categories are similar to type III as classified by Magee.²⁷

Psychogenic — any sudden onset of impotence, usually with an identifiable psychogenic problem, such as premature ejaculation, marital problems, or severe depression, or with a history of significant past psychic trauma²² (similar to types I, II, or IV of Magee's classification).²⁷ Patients with histories consistent with combinations of the above, or not fitting any of the categories, are classified as "Mixed." See Table II.

Patient's Assessment of Morning Erection

Regular presence of a firm morning erection is considered normal. "Subnormal" is defined as presence of a soft or partial erection. See Table III.

Penile-Brachial Artery Pressure Ratios

Opening systolic pressures obtained simultaneously were used. Because of findings in the controls, a cut-off of 0.80 was used as defining adequate penile blood flow for adequate erectile function (Table IV).

Provocative Testing

Table V lists changes in circumference of penis, whether the paper strip was broken, and the patient's own assessment of the erection obtained and whether he found the film stimulating.

Nocturnal Testing by Paper Strips

The results are tabulated as percentage of nights used. (One strip used per night.) Any bands torn are considered evidence of a firm nocturnal erection, as we saw that increases in size without firmness (during provocative testing) did not break the strips (Table VI). The

TABLE II
Diagnoses by Symptom Complex Alone

N = 29		
Psychogenic	10	(34%)
Vascular	8	(28%)
Neurogenic	1	(3.4%)
Mixed	10	(34%)

TABLE III
Presence of Morning Erections by Final Diagnosis

	Controls	Psychogenic	Vascular	Neurogenic*	Mixed
Normal (firm) erections	9	9	0	0	0
Diminished erections	0	1	7	0	3
No erections	1	1	6	0	1

*1 Reflex erection
(Except for quadriplegic patient, all other patients with neurogenic impotence were also found to have other factors causing impotence and are included in "mixed" category.)

TABLE IV
Diagnosis and Penile:Brachial Artery Systolic Pressure Ratios

Final Diagnosis		Penile:Brachial Artery Ratio ≥ 0.80
Normal Controls	(10)	10
Psychogenic	(11)	10
Vascular	(13)	1
Neurologic	(1)	1
Mixed	(4)	1

TABLE V
Results of Provocative Testing by Final Diagnosis

	Controls (10)*	Psychogenic (11)	Vascular (13)	Neurologic (1)	Mixed (4)
↑ Circumference ≥ 2.0 cm	2/9	1	1	0	1
↑ Circumference ≥ 1.0 cm	7/9	4	7	0	2
Any ↑ Circumference (≥ 0.5 cm)	9/9	9	9	0	3
Any bands broken on paper strip	4	1	0	0	0
Found film stimulating	8	6	12	1	2
Felt erection functionally adequate	8	3	0	0	0

*Machine malfunction with one control, N = 9 for strain gauge results.

TABLE VI
Nocturnal Penile Tumescence Monitoring With Paper Strip Results by Final Diagnosis

	Controls (N = 18 nights)	Psychogenic (N = 18 nights)	Vascular (N = 21 nights)	Neurogenic (N = 3 nights)	Mixed (N = 9 nights)
Any bands broken	14 (78%)	9 (50%)	1 (5%)	1 (33%)	0
Awoke when bands broke	6	7	0	0	0
Opened at tape	1	1	0	0	0

numbers of patients who awoke when the strip broke are also listed. Sex or alcohol usage prior to using the strips were found to have no effect on the testing.

Serum Testosterone Levels

These were not obtained for controls, but were obtained for 27 of 29 impotent patients. The normal range at our institution is 300-1200 ng/dl. Only 2/29 patients had abnormal results (61, 241) while the other 25 ranged from 348 to 1017, with an average at 580. No abnormal pituitary hormonal levels (LH, FSH, prolactin) were found in the two patients with low testosterone.

DISCUSSION

Diagnosis of a specific etiology of impotence is extremely difficult, probably because of the influence psychological factors have even on normal sexual function. Therefore, it is doubtful that any *single* test will ever be developed which can be used for that purpose.

The first question, and probably the most crucial, is in differentiating between psychogenic and organic impotence. We have found an overall symptom complex consistent with a psychogenic pattern to be present in 90% of the patients we eventually diagnosed as having psychogenic impotence.

In addition, the history of normal morning erections is present in 82% of them. A normal penile:brachial artery pressure ratio was also present in 91% of these, while firm nocturnal erections were demonstrated in 50% by the paper strip. During the provocative testing, 55% found the film stimulating, 82% had some increase in circumference on tumescence monitor, and 36% felt they had a functionally adequate erection. None of these demonstrated significant vascular or neurologic abnormality on physical exam.

Compare this with all patients eventually diagnosed as having organic impotence (all types combined). In these patients, none had a symptom complex which was consistent with psychogenic impotence; none had normal morning erections; 17% had normal penile to brachial artery pressure ratios; and 6% dem-

onstrated firm nocturnal erections by paper strip. In the provocative testing, while 83% found the film stimulating and 67% showed some \uparrow circumference with the tumescence monitor, none felt that the erection was firm enough to be used in intercourse.

Differentiating between various types of organic impotence (vascular, neurologic, endocrine, genital) may turn out to be of lesser importance than differentiating between organic and psychogenic impotence. At present, the results of reversal of vascular impotence by revascularization procedures are poor^{7,28,29} when compared to the results of penile prosthetic surgery. Whether this can be improved upon remains to be seen, so at present the need for phalloarteriography is questionable. Reversal of neurologic causes of impotence, except perhaps in the cases of nerve compression by discs or tumor or spontaneous remission in multiple sclerosis, is not possible. The only truly reversible organic etiology seems to be endocrine.¹⁷ All other types of organic impotence at present are probably best treated by penile prosthetic implants, which have excellent results.³⁰⁻³⁵

In our experience, the penile/brachial artery pressure ratio was abnormal in 93% of those eventually diagnosed as having vascular impotence, while it was abnormal in only 40% of those with mixed or other types of organic impotence. The testosterone level was abnormal in only one of those diagnosed as having vascular impotence, and there were no neurologic abnormalities on physical examination found in this group.

We earlier mentioned the expense of the use of the strain gauge tumescence monitor and the fact that no tests previously existed to assess firmness of erection. An interesting finding was discovered during provocation testing with our controls. It has been reported that an \uparrow of 2.0 cm in penile circumference is the average on penile tumescence monitoring and that 1.6 cm \uparrow is needed for adequate erection.³ However, we noted that although 80% of our controls felt they had

functionally adequate erections during provocative stimuli, only 22% had ≥ 2 cm increase in penile circumference, and only 55% had an increase of ≥ 1.5 cm. In addition, one patient with vascular impotence demonstrated this degree of increase in penile circumference with a functionally inadequate erection. Also, as stated previously, 67% of the organically impotent patients demonstrated some increase in penile circumference during provocative testing. Therefore, we feel that detection of nocturnal penile tumescence by measuring only the increase in penile circumference is not a reliable method of differentiating between organic and psychogenic impotence if used alone.

CONCLUSION

At the outset five objectives were set forth for this study. The first four of the objectives have been met in that our method for evaluating impotence can be done on an outpatient basis, is inexpensive, is non-invasive, and involves widely available techniques. The fifth objective, assessment of firmness of erection, has been made possible by the paper strip technique, although this needs some refinement to decrease what are probably a certain number of false negatives (i.e., firm erections which do not break the strips). One disadvantage of our method has been the time involved, for at least two hours are required for a complete patient evaluation. However, this may be minimized by judicious use of other professionals (nurses, physicians assistants) and by blocking out certain appointment times when only these patients are to be seen.

In conclusion, we have noted at least three useful findings. First, there is no one test which is the be-all and end-all in the impotence workup. All findings must be taken together in arriving at the most likely diagnosis. Second, the change in penile circumference detected by strain gauge tumescence monitoring does not reflect change in firmness, and probably results in over diagnosis of psychogenic impotence. Third, if we ask the right questions and listen to our patients,

they may just tell us their diagnosis, as the symptom complex and description of the morning erection seem to correlate highly with the final diagnosis.

It is our hope that, as more work is done in this area, the diagnosis of etiologies of impotence will become even simpler, resulting in truly better care for our patients.

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ERRATUM, Vol. 43, No. 5: In the article "Hooper Memorial Lecture: Vistas in the Management of Bleeding Esophageal Varices" the photo on page 354 was incorrectly identified as Dr. Joseph Ward Hooper. It is Nathan Womack. Dr. Joseph Ward Hooper is pictured at left.

Message of the President To the House of Delegates

Josephine E. Newell, M.D.
May 6, 1982

IN May 1981, the North Carolina Medical Society did me great honor by my election as President of the North Carolina Medical Society, entrusting this Society to my leadership during the ensuing twelve months. I promised you my best effort in behalf of the Society.

I commend to you the six busiest commissioners ever known to organized medicine, the twenty most conscientious councilors and vice-councilors, and fifty-one of the hardest working committee chairmen in the whole world. I shall never forget the 500 men and women who served on these committees and who responded so quickly and well to my battle cry — "Participate!" Believe me — they have all participated — eagerly and well. I am grateful to each and every one.

In June, [1981] the chairman of the Committee on Legislation, the Commissioner of Public Relations, the chairman of the Committee on Social Services, and I spent an entire day visiting Governor James B. Hunt, Jr.; our colleague, Sarah T. Morrow, Secretary of the Department of Human Resources; and Barbara D. Matula, Director of the North Carolina Division of Medical Assistance. We were successful in establishing an open avenue of communication and liaison which has continued throughout the year. During this uncertain time of inflation, budget reductions, and a new

federal administration, the North Carolina Medical Society has enjoyed a reciprocal, cooperative, friendly relationship with Governor Hunt, his Cabinet members, and staff.

Later in June, the Society proudly hailed the election of Past-President and AMA Delegate James E. Davis to the office of Vice-Speaker of the American Medical Association. In his usual manner, Jim Davis is carrying out the duties of his new office to perfection, and we are justly proud of him. In June 1982, just one month away, we shall vigorously support the candidacy of John Glasson for election to the Board of Trustees of the American Medical Association. Also a past-president of our society and an AMA Delegate, John has long served on the AMA Council on Medical Services, which he now chairs. The North Carolina Medical Society can well be proud of these two deserving physicians whom we offer for service to the American Medical Association.

Just as with any other large organization, the needs and services of the North Carolina Medical Society have undergone the changes of time, society and technological advance. At the urging of the membership and headquarters staff in 1981, the executive council voted to contract a management study by a nationally known firm, Booz-Allen and Hamilton, Inc. The report was received in June, carefully reviewed by the Committee on Personnel and Headquarters Opera-

tion, and reported to the executive council at its September meeting. The council voted to file the Booz-Allen report, appointed a search committee to search for a person capable of assuming the responsibilities of the executive director (whose announced retirement is eminent in the next 2 to 3 years), and directed the Personnel Committee to begin to implement the recommendation of the Booz-Allen report at its earliest opportunity. These directions from the executive council have been implemented.

Our good friend, representative Wilma Woodard, chairman of the House Corrections Committee of the North Carolina General Assembly, requested that a committee of physicians be appointed to evaluate health care in North Carolina prisons over a two year period and that the committee submit a written report to the legislature at the end of that period of time. This committee, chaired by past-president Jesse Caldwell, Jr., has already visited Central Prison, Women's Prison, and Caledonia on schedule and will be prepared to submit its report to the legislature at the appointed time.

In October, the Committee on Legislation sponsored an extremely successful Legislative Symposium at Myrtle Beach. Well attended by the Society's membership, the Symposium featured a panel of well informed North Carolina legislators and Senator John East as the banquet speaker. Our members learned a great deal from the legislators, and

we believe that we were able to convey to them our interest in legislation pertaining to the quality health care of North Carolinians.

During the 1981 legislative session we were unsuccessful in our efforts to secure repeal of the Optometry Drug Use Law but, undaunted, we shall try again. A panel of speakers has visited many county medical societies to inform our membership of the impending drive by North Carolina chiropractors to redefine the practice of chiropractic through statute. The response of the society's membership has been enthusiastic.

The Committee on Ethics and Religion, chaired by Gloria F. Graham, presented an outstanding Ethics Retreat at Quail Roost in June. The retreat, attended by physicians, ministers, and sociologists, featured our good AMA friend, Tom Ballentine of Boston, as the keynote speaker. Dr. Ballentine was so impressed that he vowed to duplicate the retreat in Boston.

On July 22, 1981, Secretary Morrow and Medicaid Director Barbara Matula met with four representatives of each major health professional organization to discuss impending reductions in the North Carolina Medicaid budget. During its October short session, the General Assembly passed its amended Appropriations Act, designating the reductions in covered Medicaid services with which you are all familiar. The Appropriations Act mandated the Division of Medical Assistance of the Department of Human Resources to develop plans by May 1, 1982, for prepaid contracts for medical services and medical devices, as well as a statewide fee schedule for physicians, dentists, chiropractors, optometrists, podiatrists and clinics. DHR was instructed to consult with "the providers of such services and their respective professional associations."

Subsequently, I appointed an ad hoc committee to consult with the Department of Human Resources on this matter. The ad hoc committee was comprised of the elected chairman of each of the twenty specialty sections of the North Carolina Medical Society. This ad hoc com-

mittee has submitted four reports which will be considered today by this House of Delegates. I commend the chairmen of the specialty sections for their enthusiastic participation in these committee meetings which turned out to be the worst weather days of the entire winter.

Some have said that Vice-Presidents of the Society have little to do. Ask John Foust, our First Vice-President. I asked John Foust to chair a continuing Committee on Membership. Has he ever done it. With his ever-present helper, Deanna Godwin, administrative assistant, Membership, John has punched and probed every dark nook and cranny of the state of North Carolina to produce the fantastically successful new membership drive of the North Carolina Medical Society.

Although such matters are hard to evaluate, probably the society's hardest working and most conscientious committee is the Committee on Physicians' Health and Effectiveness, chaired by Ted Clark of Pinehurst. Ted and I have participated in many panels together this year. Although I have never known Ted socially, I count him and his lovely wife, Gail, among my dearest friends because of my great admiration for the selfless service they have shown this society. The members of the Committee contribute many uncounted hours each year in behalf of our membership. Their time is devoted to working, one on one, with our less fortunate colleagues who have fallen victim to alcohol, drugs, or mental illness. This committee has recommended that the North Carolina Medical Society encourage contributions to the North Carolina Medical Society Foundation, Incorporated, earmarked for assistance to physicians through the Committee on Physicians' Health and Effectiveness. All contributions to the foundation are tax-exempt. The executive council concurred, and I commend, this effort to you when considering your charitable donations each year.

Many of our members are extremely concerned with North Carolina's Right to Natural Death Statutes. Our legal counsels, John Anderson and Beau Bobbit, and I

received many letters and telephone calls from individual members and three county society requests that this state society study this issue. At the direction of the Executive Council, an ad hoc committee, chaired by Julius Howell and comprised of the specialty section chairmen and representatives of both the Ethics Committee and the Committee on Legislation, was appointed. After careful deliberation, a policy statement was developed and will be considered today in the House of Delegates.

Because of ever increasing tension concerning medical liability insurance, an ad hoc Committee on Risk Management, chaired by Ira M. Hardy, II, was appointed. With the cooperation of this ad hoc Committee, Medical Mutual Insurance Company developed a three-hour risk management program, *Malpractice Awareness Stat.* Completion of this excellent program assured each attendee of 3 Category I hours of CME credit. If the attendee is insured by Medical Mutual, he or she will receive a 5% discount in premium in each of three years.

At its February meeting the executive council devised a questionnaire concerning evaluation of the effectiveness of the society's current operations and its publications. The Executive Committee was instructed to distribute the questionnaire to the entire membership, evaluate its results, and report the evaluation to this House of Delegates. Six thousand and one hundred questionnaires were mailed out. An overwhelming 45% were completed and returned for evaluation. I am advised that a 45% response is excellent and certainly indicates that the Society's membership is alert and interested. The report of the evaluation is in your packet.

I greatly appreciate the cooperation of the entire headquarters staff, who kept a stiff upper lip and tried to smile at the thought of this compulsive old maid as president. They have performed their tasks efficiently and well, as is their custom. They are fine, dedicated people of whom we can be proud.

There are not sufficient words in

the English language to express my gratitude to the Society's officers and Executive Council for their conscientious work. I shall never forget the chairmen of the specialty sections, who came so willingly and who proved that specialty societies are so vital to the main body — the umbrella organization — organized medicine. Most important is my sincere gratitude and love for the membership who heard my desperate call to action — who did pick up the gauntlet and race to the battle front. Indeed, you are my friends and my family.

GALEN (fl. 2nd Century)

Instruction in medicine is like the culture of the productions of the earth. For our natural disposition is, as it were, the soil; the tenets of our teacher are, as it were, the seed; instruction in youth is like the planting of the seed in the ground at the proper season; the place where the instruction is communicated is like the food imparted to vegetables by the atmosphere; diligent study is like the cultivation of the fields; and it is time which imparts strength in all things and brings them to maturity.

De Cogroscendis Curandisque Animi Morbis,
Ch. 6 (tr. by P.W. Harkins as *On the Passions*
and *Errors of the Soul*)

Annual Address of the President

Josephine E. Newell, M.D.
May 8, 1982

AT no time in the history of civilization has it been more important for physicians to be united in heart, mind, and action. America's existence is threatened by an unstable economy. Unemployment, changing morality, and a great deal of uncertainty, each, in its own way, has exacted a heavy toll on the practice of medicine and the health care of Americans.

Important terms are falling from favor in our health care system. Those terms are "family doctor" and "private physician." They are being replaced by terms such as "practitioner" and "health care provider." What happened to the world of shared, mutual respect between physicians and their patients? Many of us remember when this was the practice of medicine. To some of us, private practice is still the dream world which incorporates knowledge, integrity and caring — in an individual physician/patient relationship. It is a world which, ideally, should not change — even in this changing world.

Why is the private doctor concept being lost? Have we become too specialized? Is it due to change in social mores? Third party interference? Or, have we lost our ability to care?

Perhaps it is because of increased mechanization. Thirty years ago, we had to rely upon "hands on" examination and our own ability to analyze the clinical situation in the

diagnosis and treatment of our patients. However, in the past ten years, medicine has become a proceduralized science. Computers and electronic machines have begun doing things for us which we never dreamed could be done. They have opened diagnostic and treatment arenas, into some of which we now fear to tread.

Perhaps we are losing this concept because of increased emphasis on the business aspects of medicine. We are told that the "health care industry" is the third largest industry in the nation. Physicians have incorporated into their vocabulary strange phrases such as "alternative health care delivery," "Health Maintenance Organization," "Independent Practice Association," and "for-profit" hospitals.

Then again, maybe the loss of the private doctor concept is due to changes in social mores. Thirty years ago, our patients were grateful for the care which we were able to render, and ours was a close, cooperative physician/patient relationship. As Medicaid and Medicare have made access to medical care easier, medical care has become a right as well as a privilege. The public has become more demanding, and the physician/patient relationship has often become adversarial.

I do not believe that we have lost our ability to care. But, it is no longer enough to care only about our individual patients. We must care, collectively, about the system as a whole. The deterioration of the physician/patient relationship did not culminate in our individual of-

fice, and we cannot correct it, individually, in our offices. We must reclaim our role as the physician who ministers to the sick, both individually and collectively.

I believe that government is making puppets of us all through — suspense. We are warned of cliff hangers such as "impending changes in the Medicare and Medicaid program and health care budget reductions." I am reminded of a very famous Englishman who attended all of the proper English schools during his youth in the early 20th Century. As a boy, he was shy and introverted but somehow managed to break a minor rule at the beginning of one day at his prep school. Any infraction of the rules brought with it a severe caning — at the end of the school day. Having never received corporal punishment before this time, the boy became almost hysterical with fear by the day's end. One look at the boy, while flexing the cane in both hands, told the headmaster that this lad had suffered enough. He gave that boy only one very light tap with the cane — and taught him a lesson, which made him a multi-millionaire and a knight of the realm. Alfred Hitchcock learned, then, that the most frightening thing in life is — suspense. Hitchcock dedicated his life and career to suspense.

Yes, the government agencies are flexing the cane. What changes will Congress impose? When will they vote? When will the changes come? Will they greatly affect patient care? Will the "holder of the gold" change the face of medical practice?

President Reagan has assured us

Given before the Second General Session, North Carolina Medical Society, Pinehurst, N.C., May 8, 1982.

that his administration will espouse "deregulation." Our "suspense" now centers on the necessity of knowing just how the President, Secretary Schweiker, and the Congress define such essential words as "deregulation," "competition," and "free market." Industry is picking up on this and moving into the health care arena — while we stand paralyzed.

One wonders how government viewed physicians when it began to describe us as "providers." A provider is "one who controls a commodity and is involved in its distribution and sale." Most physicians have an aversion to the concept that medical care is a commodity or that physicians are involved in the sale of a product. How can the term "provider" possibly enhance the image of the physician or the traditional concept of the physician as one who ministers to the sick? Healing of the sick invokes a personal relationship of concern and caring. We are constantly told that we are part and parcel of a "health care industry" which brings all physicians together for easier control, of an industry which runs on "health care dollars" that buy "health services" from "health care providers." What are we doing to dispute this concept — will we react too late? Although we are still the physicians for our patients, government and industry have become the "physicians," treating the disorders of our health care system.

In the 1950s and '60s, the nation was told, repeatedly, that a great health manpower shortage existed and that this situation must be remedied, if we were to enjoy a sound national health policy. The battle cry became "patient access to medical care." Immediately, government set about to increase the output of physicians by supporting programs of financial aid to medical students and capitation payments to medical schools for expansion of enrollment. The medical schools set out to double their enrollments. The "physician extender" began to emerge in the medical arena — now said to be overloaded with "health care providers." And what are we doing to correct this?

Physicians must unite to erase from the minds of government officials that we are a "health resource" which can be regulated and distributed in whatever manner government believes to be the need of the population. We must unite as one body to be an accepted, firm voice in policy determinations as to what constitutes the "common good" of Americans. But, to be an accepted voice, we must do more than oppose change. We must work together with government and industry to find solutions.

We must face — right now — the "cures" which are being proposed for the financial ills of the health care system. The media and the public have cast harsh words at physicians, hospitals, government and almost everyone else concerned with health care. They have us preoccupied with trying to place the blame for the continuing rise in the cost of health care during the past twenty years. While we are still worrying about placing blame, government, big business, and the insurance industry have already prescribed a treatment for the problem which they may pour down our throats before we have time to read the label on the bottle.

We have been told, repeatedly, that health care will not be rationed. Not true! Health care is rationed now. North Carolina Medicaid recipients are limited to 18 visits to health care providers each year. They are limited to four prescriptions each month. If a truly sick patient needs more care than allowed by the Medicaid program, our health planners are confident that you will give it without charge — or for a token fee. After all, we know that lack of payment is not a defense for abandonment.

I am afraid that fee schedules will be another fact of life. You and I will be sent a list of procedures which we may perform under certain circumstances and a list of "allowable" payments for those procedures. The deficits in state and federal budgets and the falling profits of health insurance companies make it obvious that those payments will be neither usual, customary, nor generous.

Although already regulated, the

use of hospital beds will be even more tightly controlled. Pressure, which has been exerted in the form of suggestion by PSROs, will be replaced by retrospectively denied payments to physicians and hospitals. If a patient is judged to have been inappropriately hospitalized or to have been kept there too long, hospitals will not look kindly on the staff physician who fills an inpatient bed for which there will be no pay. It will make little difference to the hospital that the physician also was not paid for those inpatient days.

Many of our patients are going to have to reach in their own pockets to pay part of the cost of an office visit or a surgical procedure. While they are going to miss those liberal "good old days" of first dollar coverage, they will quickly learn to shop around for medical care. The "bargain" which they find may be less care — and less quality — than they need.

So, as we meet here again to debate the evils of PSROs and the wisdom — or lack of it — in supporting IPAs and HMOs, we are simply indulging in meaningless dialogue. Surely, it is great therapy to ventilate old hatreds or to make a stirring speech about great and noble causes, but I fear that some of our individual fervor needs to be replaced with group determination. We need a willingness to talk less and listen more — and to cultivate a spirit of compromise with each other. We must become a totally unified medical society.

Recently, in *Medical Economics*, I read an article entitled "Specialty Societies Vs. the AMA." Immediately, I was overwhelmed with dismay that six nationally known panelists — all physicians — perceive specialty societies and the American Medical Association to be antagonists. At least the article did cause me to carefully review the association of specialty societies with the North Carolina Medical Society.

My initiation into state society activities, many years ago, was my appointment as chairman of the Committee on Exhibits. Of course, I was required to attend the meeting of the Committee on Arrangements

at Committee Conclave. With great apprehension, I stepped into the Terrace Cottage for the first time. Another great "first" occurred at that meeting. I met Jack Hughes. Let the records show that neither Jack Hughes nor I have missed a single meeting of the Arrangements Committee since that day. Being more old maidish than I, Jack still sits in the same chair — completely blocking the air conditioner! To this very day, I remember the two motions made by that gentleman at that meeting. He said, with great aplomb, "Mr. Chairman, I shall enter my usual motion — that we eliminate the annual meeting!" Needless to say, the motion failed for lack of a "second," but it had already knocked the breath out of the brand new exhibits chairman!

His second motion concerned encouraging the specialty societies to meet in Pinehurst concurrently with the annual meeting in order to "strengthen the ties between the organizations." It was a very wise motion. At the time, I was stunned — because I believed the bond between the specialty societies and the state society to be impregnable. I still believe it!

Specialty societies are represented by delegates at both the AMA and the North Carolina Medical Society.

The specialty societies perform many services so well for their membership. There is no question but that they far excel any state medical society in continuing medical education. Of course, they should. Specialty societies look at a smaller professional field and respond to a much smaller membership. Specialty societies represent the "old school tie club." Their meetings equate school reunions — reunions of resident physicians of yesteryear — all with a centralized scientific interest.

Government and other adversaries have long since considered the specialty societies to be "splinter organizations," each with its own perspective and agenda, each with a lobbyist for its own constituency. Every physician understands the intent of such a theory. We will never cast our lot with this "craft

union approach." We're quite familiar with the old battle cry, "divide and conquer." We will not be conquered.

We *must* be united in an umbrella organization which can and will speak for all North Carolina physicians. The North Carolina Medical Society must be responsive to each member's individual needs as well as to the collective needs of each specialty section. On the other hand, the specialty sections should not confine themselves to "one issue" interests with resultant confusion of conflicting representation at the legislative level. It is of paramount importance that we, as a state society, concern ourselves with issues of great importance to any one of our particular specialty organizations and, even more importantly, that we express our peer support by presenting a *united* front to the entire world. As we have seen, a small change in legislation, affecting what seems to be a narrow specialty area, can impact directly or indirectly on the well-being of all our patients. We must not be divided and we will not be conquered!

During the past year, the specialty sections proved their eagerness to participate in matters of concern to all physicians. On two separate occasions, the elected chairmen of the specialty sections met as an ad hoc committee to deal with major issues of medical practice. The first was the Medicaid statewide fee schedule; the second was the Right to Natural Death legislation. Their recommendations have been presented to the House of Delegates.

We are all physicians first — before we acquire a specialty designation. Just as one of your arms, separated from your body, cannot function at all, a specialty society, separated from the entire body of physicians, cannot function. A brain which cannot communicate with the appendages is of little use. It stands to reason that the North Carolina Medical Society cannot function without the specialty societies any more than they can function without a unifying organization. I am reminded of a well known parable:

A rabbi spoke with the Lord about heaven and hell.

"I will show you hell," said the Lord, and they went into a room which had a large pot of stew in the middle. The aroma was delicious, but around the pot sat people who were famished and desperate. All were holding spoons with very long handles which reached the pot, but, because the handles were longer than their arms, it was impossible to get the stew back into their mouths. Their suffering was terrible.

"Now I will show you heaven," said the Lord, and they went into an identical room. There was a similar pot of stew, and the people had identical spoons, but they were well nourished and happy, talking with each other. The rabbi did not understand.

"It's simple," said the Lord.

"You see, they have learned to feed each other."

The news is not entirely bad. The North Carolina Medical Society has seen what is coming and has moved to close ranks. We are in the middle of a membership drive to enlist the aid of those physicians who have not seen the necessity of joining our ranks. We spent \$25,000 on a management study to help streamline and make more effective our headquarters personnel and operation. Those changes are already underway.

We intend to tighten our budget and get the maximum use of every dues dollar you send us. We are building a new communications department and looking for a well trained, professional director. We plan to give you the information you need to cope with the challenges we face, and we are going to give it to you on a timely basis. It will be written so you can understand it and, perhaps, even enjoy reading about it. We are tired of so many of our communications to you winding up in your "round file #13." Part of that has been the society's fault.

We want you to help us plan for the future. We sent you a questionnaire, and 45% of you read it, completed and returned it. In my opinion,

this proved that the membership has a great deal of interest in what the state society is doing. Some of you were kind enough to add your personal comments. Some were flattering, and others were critical. All were directed toward what you want the society to do for the next five years. You told us what the membership believes the society is doing which is a waste of time and money. Believe me — we are listening, and we plan to act on your suggestions.

Please do not stop there, however. Write the President of this society, or to your councilor, or to the headquarters staff, if you have an axe to grind. We need *your* involvement — the involvement of every physician in our membership and of every auxilian. This society need not fear debate and disagree-

ment. Disinterest and apathy are — and always have been — the greatest enemies of democratic institutions.

I told you one year ago that I planned to bring the membership of the North Carolina Medical Society together. Our officers and staff have not been to every county society, but we haven't missed many. I have had the cooperation of an excellent executive council; understanding, hard-working commissioners; dedicated officers and staff; and the benefit of the wise counsel from many of our past-presidents.

Abraham Lincoln once ruefully remarked that no president leaves office with the reputation which brought him there. There have been days of frustration and frayed nerves, and most of my associates have been kind enough to under-

stand and make allowances. Like Mr. Lincoln, I have been less concerned with my political reputation than with the union of this Medical Society.

My year is over. The record has been written, and my contribution — if I have made one — will be judged by what happens in the next few years. I can tell you this: I have had a marvelous time, had the privilege of meeting many of you whom I did not know, made a lot of new friends and, I hope, very few enemies. The warm satisfaction of having you choose me as your president will stay with me for the rest of my years. For that I shall forever be grateful. And now — I close my book of memories, for what is written there is written with the pen of hope, unblunted with despair.

JOHN MORGAN (1735-1789)

There is no art yet known which may not contribute somewhat to the improvement of Medicine; nor is there any one which requires more assistance than that of Physic from every other science. Let young men therefore, who would engage in the pursuit of Medicine or Surgery, make use of all their industry, to possess themselves in good time of these acquisitions. They are necessary to facilitate a progress in the healing arts; they embellish the understanding, and give many peculiar advantages, unattainable without them.

A Discourse Upon the Institution of Medical Schools in America FR

An Economic Perspective

John G. Medlin, Jr.

IT was last fall when Charlie Cummings invited me to speak with you this morning about the economy. At that time, the general expectation was that by now interest rates would be down, and business activity would be up. I readily accepted the assignment and looked forward to the prospect of being with my friends from the medical profession in the spring at this lovely place to present some good news.

Instead, it is with some trepidation and discomfort that I address you today under less favorable circumstances. First, with interest rates still so high, I am not sure it is safe for a banker to stand unprotected before so many borrowers. Second, when I tell you the disturbing truth about the precarious state of our economic system, some of you may break out in a rash and need to consult a colleague.

The making of economic prophecies is especially risky in these turbulent times. You will note that my remarks are titled, "An Economic Perspective" and not "An Economic Forecast." This is a subtle way of disclaiming any confidence in being able to predict what might happen over the next year, the next quarter, or even the next week. About all I can do is review the major forces and trends which influence economic life and provide an impressionistic view of the outlook.

What are the reasons for the cur-

rent economic dilemma and uncertainty about the future? The short answer is that our nation has for many years consumed more than it has produced and spent more than it has earned. A more detailed explanation of these excesses of the past can be found largely in major demographic shifts, explosive federal spending, misguided tax policy, excessive money supply growth, spiraling energy costs, and huge trade deficits. Let us briefly examine developments in these areas over the last decade or two.

Between the mid-1940s and early 1960s there were an average of about four million births per year in the U.S. compared to around two million annually between 1930 and 1945. This created a huge bulge in the population curve which became known as the post-World War II baby boom. It caused the teenage, high school, college and young working age population to begin mushrooming in the early sixties. For the next two decades, this oversized generation of change-oriented youths had a profound effect on the economic, social and political life of our nation.

In 1969, at the time of the last balanced federal budget, the total debt of the U.S. Treasury was \$367 billion. Since then our government has spent an average of about \$50 billion per year more than it took in. Last fall, the national debt passed the \$1 trillion level. Economists call that stimulative fiscal policy. It has a tendency to make the economy look temporarily better than underlying fundamentals. Borrowing instead of raising taxes to pay for

increased spending also makes it easier for politicians to get re-elected. The tax comes later in subtle but painful ways.

The higher level of federal borrowing increased the demand for credit. This would not necessarily have been a problem if the supply of funds generated by savings and capital formation were adequate to meet total public and private credit and investment needs. However, for many years Americans tended to save and invest less and to borrow and spend more. Individuals saw that it was better to borrow than to save since earnings on savings and investment were highly taxed while interest paid on loans was deductible. Generally, taxes took an increasing share of national income through direct statutory increases and more subtle bracket creep.

The result over a period of time was an accumulation of government, business and consumer credit demand that exceeded the available supply of private sector savings. This put the Federal Reserve Board in a dilemma. To create new money in an amount sufficient to meet total credit demand and hold down interest rates would cheapen the currency and cause inflation to skyrocket. To restrain the growth of money would cause interest rates to skyrocket. The monetary authorities took the easy way out and during most of the seventies increased the money supply at a pace sufficient to accommodate relatively unrestrained expansion in credit and contain rates.

One result was a gradual erosion of confidence in the dollar on inter-

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national money markets and the beginning of the energy problem. As our nation grew more dependent on imported oil, the exporting countries became wary of the rapidly depreciating paper dollar from which gold backing was removed in the early seventies. The per barrel price of foreign crude was raised from about \$3 in 1971 to over \$30 by the early eighties. It is interesting to note that the market price of gold has also increased tenfold over the past decade. In other words, OPEC is still basically on the metal standard since an ounce of gold valued at around \$350 today will still buy the same ten to twelve barrels of crude oil as an ounce priced at \$35 back in 1971.

The combination of price and volume increases drove the U.S. foreign oil bill from approximately \$3 billion at the beginning of the last decade to around \$60 billion more recently. This is the principal reason for our nation experiencing a foreign trade deficit in the range of \$20 billion to \$40 billion annually beginning in the latter half of the seventies. Also contributing to the deficit were escalating labor costs and declining productivity which increased imports and reduced the competitiveness of domestic goods in foreign markets. The overseas dollar holdings of foreigners have grown to approximately \$1 trillion and represent an ominous overhanging claim against our international reserves and domestic resources.

These powerful forces all converged in the late seventies to give us the stagnating economic conditions and volatile money markets which have existed since then. The short-term mythology of deficit spending and easy money served only to temporarily obscure long-term reality. It also momentarily took the heat off the politicians and delayed the time when the ill effects of their free-spending habits would be exposed. Reality came through runaway inflation and stratospheric interest rates.

It must be recognized that nations, like businesses and people, will eventually go bankrupt if spending perpetually exceeds in-

come. If the people of a country do not impose fiscal and monetary disciplines on their government, the international marketplace eventually will. This is basically what happened as imported oil prices rose tenfold, as the international money markets convulsed in crisis, and as the U.S. was flooded with goods at prices cheaper than could be produced domestically. A result was the exportation of many jobs and a decline in the value of our currency.

In essence, large budget deficits and excessive money growth represent borrowing from the quality and quantity of future life. They must eventually be repaid through increased taxes, higher inflation, or a lower standard of living. These inevitable results hurt everyone, but tend to fall hardest on the elderly, the poor, and the young. There is little hope of meeting the nation's social responsibilities until its fiscal house is put in order and the rate of inflation held down. In reality, there is much more human compassion in a responsibly balanced budget and moderate money growth than in liberal deficit spending and easy monetary policy.

The real promise of cheaper money, sustainable prosperity, social progress, national security, and personal liberty for the future lies in a balanced mixture of fiscal and monetary restraint for a sufficient time to break the back of inflation. The only lasting cures for this cancerous economic disease are major fiscal surgery and strong monetary chemotherapy. The band-aids and aspirin used in the past have provided only temporary relief while the patient got worse. Much good life has been borrowed from the future, and the time necessary for repayment has only begun. It would be sad indeed to leave our children the cruel legacy of chronic price inflation and a growing burden of unfunded social contracts.

The global depression of the 1930s and eventually World War II were triggered largely by high inflation rates, large foreign trade imbalances, severe international monetary instability, and a void in world leadership. There are too many similarities today in these same

areas to casually dismiss the possibility of a chain reaction of events which could again precipitate global economic stagnation or a major military conflict. The best, and possibly the only salvation is an America which is economically strong, militarily prepared, and politically unified.

What, then, is the prospect for our country avoiding the disastrous fate of nations throughout history which have attempted to defy economic reality? One can seriously debate whether it is possible in our diverse and special-interest-dominated democracy to impose the necessary restraint and discipline. Some academics assert that such a form of government contains the seeds of self destruction through an inflationary bias which is bred of the human tendency toward political expediency.

The current difficulty of our leaders in arriving at a budget compromise and in reducing the deficit certainly lends validity to this theory. The recent maneuvering in Washington is perhaps the most risky political charade in American history. Each week that goes by without a credible and sound fiscal plan takes our economy and financial system closer to the brink of crisis. Yet, some congressmen seem more concerned about partisan politics and posturing for the fall elections than in serving the national interest and averting disaster. The American economic and financial system is highly vulnerable, and this is no time for demagogic rhetoric and political expediency. The people need to know the truth.

Let us look at the scary backdrop of the current economic and financial scene. Key interest rates are hovering just below their all-time peaks for the history of our republic. The automobile and housing industries are in a depression because few people can afford the prices of their products or the cost of financing them. Most savings and loan associations are troubled and losing money due to carrying low-yield fixed rate mortgages with high cost variable rate money. Around ten million people are unemployed with layoffs and bankruptcies steadily

adding to the number. The economy appears to still be sliding into what could become the deepest recession since the 1930s. The situation is getting very serious.

This unpleasant scenario is likely to get worse instead of better until interest rates are reduced substantially. Interest rates are unlikely to come down very much until fiscal restraint joins monetary restraint in the battle against inflation. Current estimates project a federal deficit of around \$100 billion in 1982, up from \$60 billion last year, with progressively higher figures in subsequent years. This prospect breeds nervousness in the financial markets and prevents money rates from declining despite lower inflation and a weak economy.

At this point, it might be useful to review the basic determinants of interest costs which do not appear to be well understood by many people. Money rates are not dispassionately and capriciously set by coldhearted and steely-eyed bankers. Instead, they are established by the interaction of savers, intermediaries, and borrowers in intensely competitive money markets based on many fundamentals and psychological considerations. The main factors which determine the level of interest rates at a given time include present conditions and future expectations for the supply of money, the demand for money, the rate of price inflation, and the degree of credit risk.

The combination of these factors has resulted in both ordinary consumers on main street and sophisticated investors on Wall Street enjoying the best returns ever on their savings. Like OPEC, they have been rightfully demanding high prices for a scarce raw material denominated into depreciating dollars. To compete with the U.S. Treasury for funds, borrowers are having to pay high and burdensome rates to rent savings. Savers are the main beneficiaries of these high rates. To survive, lending institutions must pass the cost of savings on to the borrowers along with a reasonable spread to compensate for the credit risk and handling costs involved in serving as an inter-

mediary and protecting the savers' money.

While inflation is down nicely, the other factors in the interest rate equation — slow supply growth, strong borrowing demand, and high credit risk — are keeping money costs up. The massive demands placed by the U.S. Treasury on the credit markets are the principal reason for high interest rates. This is why it is so critical that federal spending and budget deficits be reduced. If Congress will rise above political partisanship and get on with this unpleasant and unpopular task, I believe the dark storm clouds that have been gathering for some time will begin clearing away. There are several favorable developments and trends which provide encouragement and hope for such a possibility over future years.

Perhaps the most positive and certain force on the horizon is the demographic change which will occur during the 1980s from the further aging of the post-World War II baby boom. Of the estimated 21 million total population increase projected for the decade, about 17 million persons, or 80%, will be in the 25 to 44 age group. The older demographic profile should have some profoundly beneficial economic, social and political effects. Household formations will accelerate. A mini-baby-boom is likely to develop. The overall economy should be stimulated as the majority of population growth is concentrated in the more expansive years of family and consumer income and spending.

Higher skills and experience levels should improve productivity. The labor force will grow more slowly, reducing pressure on unemployment and welfare costs. Since middle-aged people tend to become more fiscally conservative and to pay a large proportion of taxes, the substantial increase in their numbers could intensify the revolt against wasteful government. Those who were rebellious youths of the late 1960s and early 1970s may become as upset as they were by the Vietnam War with the realization that it is they who must pay

the mounting public bills and social promises from the past.

There are also some encouraging signs on the monetary policy front. Toward the end of the seventies, the Federal Reserve Board began to see the error of its permissive money expansion and moderation of interest rates. In October of 1979, the Board shifted its primary emphasis from managing and holding down interest rates to one of controlling and restraining money supply growth and letting interest rates be determined more by natural market forces. Except for the period of credit controls in 1980, the higher money rates of the past two and one-half years have more honestly reflected the underlying fundamentals of supply, demand and inflation.

Tax policy is another area where there has been a major and favorable shift. The President's tax reduction, savings incentive, and capital recovery program enacted last year should gradually create a larger pool of funds to meet public and private sector credit and investment needs. The program also envisions that the tax relief will stimulate the economy, gradually generate more federal revenues, and produce a declining budget deficit. If so, the natural supply and demand for money would move toward better balance, inflationary pressure would be relieved, nervousness in financial markets would be relaxed, and interest rates would fall.

There is also good news on the energy scene. Foreign crude oil has actually declined in price, and the percentage of domestic consumption coming from overseas has been reduced. This has come about through a combination of price decontrol by President Reagan, the stimulation of domestic exploration as well as alternative energy sources, and the softening in consumption due to the recession. It remains to be seen how much of this improvement is permanent, but for the first time in nearly a decade, foreign crude oil prices are not going up in quantum leaps.

Developments on the labor front offer additional encouragement for moderating the trade deficits, im-

proving the competitiveness of American goods on world markets and arresting the export of jobs. Well-publicized contract concessions involving several pacesetter unions indicate that the wage spiral has at least been temporarily slowed. This does not completely solve the problem but it does suggest a deceleration in the rate of increase in labor costs which have been a major factor in the high rate of inflation and foreign trade imbalance.

Perhaps the most exciting news of all is the substantial drop in the inflation rate itself. This is to be expected during a recession of such depth and length, and the real test will come when the economy begins to recover. To sustain the slower pace of price increases, it is critical that the Congress not provide too much fiscal stimulation and that the Federal Reserve not print excessive new money as in the latter stages of the last two recessions. If an upturn can begin and continue without rekindling inflation, the future will be brighter indeed.

The most important point to keep in mind is that there has been a favorable shift of historical watershed significance in some of the major forces which influence economic trends. The principal missing ingredient is a lack of sufficient progress in the fiscal policy area.

Even if one does not like every detail of the President's program, it does represent a fundamental change in direction that should produce better results given enough time, patience and luck. Most significantly, a start has been made in steering the cumbersome, battleship-like U.S. economy away from a collision course with the rocks and toward less hazardous water.

Sometimes it is easier to predict the more distant future than the near term. While an encouraging but still impressionistic picture appears to be taking shape for the years ahead, it would be foolhardy under the uncertain circumstances of today for me to attempt a detailed forecast of the interest rate and business outlook over the rest of 1982. I have no idea when and how much money costs will decline, when a recovery will begin, how strong it may be, or how long it might last. These are uncharted waters, and there are no landmarks on which to take reliable bearings. So much of what will happen in the immediate future is contingent on budget decisions yet to be made in Washington.

As long as monetary policy has to bear the primary brunt of controlling inflation, the economy is likely to be more depressed and interest rates to be much higher than any of us would like. The stalemate of a

risky financial climate and stagnant business conditions is not likely to be broken until Congress and the Administration exercise more credible fiscal responsibility and restraint than has been evident thus far. This may not happen until there evolves a stronger and more durable consensus of leadership and citizenship. Elected officials generally respond very well to the majority opinions of their constituents. Therefore, it is especially critical now that Americans make their wishes known to federal representatives.

A nation's strength comes not so much from its arsenal of weapons as from the unity of its people. It is crucial in these volatile and vulnerable times to reassure friends and to forewarn foes that our diverse country can still be unified and governed and that our special blend of political democracy, private enterprise, and personal liberty can still work. Despite its problems, the United States remains the best place in the world to live, work and invest. I have high hopes that the American people and their leaders will rise to the challenge and restore fiscal responsibility and financial stability. These are the essential prerequisites to achieving our common goals of social progress, economic well-being, and individual freedom.

MOSES BEN MAIMM (Maimonides) [1135-1204]

A person should always abstain from fruits of trees and not consume them excessively even when they are dried, and need not say when they are fresh. . . . Figs, grapes, and almonds, however, are always good whether fresh or dried, and a person may eat therefrom as much as he requires. One should not eat them constantly even though they are better than all the [other] fruits of trees.

Mishneh Torah, "Halchoth De'oth," Ch. IV, No. 11



PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 3

AUGUST 1982

By the time this letter is published, we will be looking forward to the Annual Committee Conclave at Southern Pines. Many of you have committee appointments and will be there for those committee meetings. I want to point out to you that your attendance does not really need to be limited to those specific committees which you have been assigned to attend. There are many other very active committees and all committees are open to any member of the Medical Society. This is really your meeting, and a meeting in which a tremendous amount of work, both ground work and finishing up of previous work, is done. I know we are all busy, but I've noticed that in our big hurry to get our job done sometimes we miss the substantial pleasure and fellowship involved in at least spending the day there, once having committed that much time, or spend an evening or night in sharing with the rest of us your thoughts and feelings about your Medical Society and what it is doing could be very rewarding for all of us. The cliché "take time to smell the flowers" is worth repeating here. I hope you realize that this also applies to those of you who have not been assigned to a specific committee; but if there is a day that you have or would be willing to spend, I think it would be very productive and very worthwhile for you to attend at least one or two of your Medical Society Conclave meetings. It would be a real eye opener for some of you to see how hard and diligent your fellow colleagues are working on your behalf. If possible every new member of the Medical Society should make a point of spending at least one day at the Committee Conclave to more fully appreciate how the Medical Society conducts our business. It should surely help you, the newcomer, realize how very important the Medical Society is to each and everyone of us and that goes for you physicians who have been in private practice for awhile and sometimes wonder what your Society is doing for you. Well, all of you stop wondering and come down to the Committee Conclave and find out. At any rate this is your cordial invitation to attend the Committee Conclave this year. I look forward to seeing all of you there and assure you that it will be worth every minute that you spend.

This month has been quiet so far, thank goodness, with not too many major issues coming before your Medical Society. The Internists had a fantastic meeting at Myrtle Beach the last weekend in July. Their program was designed to provide a comprehensive review of problems facing them in the '80's, including the role of the internist in substance abuse. This program would have been excellent for any specialty society, and as a matter of fact, for the general membership. Survival in the '80's is a problem for all of us, and without doubt most of us are well aware of it already. Of particular interest was the joint meeting sponsored by the Auxiliary where physicians and spouses joined together to consider "What Do You Do With Survivors". Mrs. Marguerite Tracy gave a very effective presentation on a most timely subject. It was a great meeting. I enjoyed it and I congratulate them on their excellent approach to the '80's. For those internists who were unable to attend the meeting, they really missed a good one.

The July 1982 MEDICAID BULLETIN verifies the changes in the North Carolina Medicaid Program, effective July 1, 1982. The annual limitation of visits to physicians' offices, clinics, hospital outpatient clinics, optometrists, chiropractors, and podiatrists has been increased from 18 to 24 visits per year. The monthly limit on prescriptions has been raised from 4 to 6 prescriptions each month. The prescription limit will be exempted for recipients who receive prescriptions for the following

treatments/diseases, if the diagnosis is written on the bottom of the prescription blank:

1. End Stage Renal Disease
2. Chemotherapy and Radiation Therapy
3. Acute Sickle Cell Disease
4. Hemophilia
5. End Stage Lung Disease
6. Unstable Diabetes
7. Terminal Stage - any life threatening illness

PRACTITIONER FEE SCHEDULES (Medicaid Bulletin - July 1982)

"A statewide fee schedule for practitioners will be adopted, as mandated by the State Legislature. A public hearing will be held on August 2, 1982, regarding the proposed methodology. The proposed methodology is:

A. Physicians

1. Outpatient service fees will be based on the 75th percentile of usual, customary, and reasonable charges by specialty, according to the current Medicaid pricing file. When different 75th percentiles exist for urban and rural areas, the higher fee will be used.

Primary care physicians will be paid at 100% of the 75th percentile for outpatient procedures. All other specialists will be paid at 90% of the 75th percentile for outpatient procedures. (Primary care physicians are defined as General Practitioners, Family Practitioners, Internal Medicine Specialists, Obstetricians, Gynecologists, and Pediatricians).

2. Inpatient Services

Fees for inpatient services, including surgical procedures, will be set as follows:

- (a) The 75th percentile, higher of urban or rural, will be identified for each specialty performing the inpatient service.
- (b) The lowest fee determined in (a) will be selected.
- (c) All physicians will receive 90% of the fee selected in (b) for the service."

I am learning more and more each month from my predecessors, and for this month I'm drawing on the 1974-75 presidential year of Frank R. Reynolds, M.D. One of his major problems of that year was the emerging crisis surrounding cost and availability of professional liability insurance for physicians. He characterized the issue this way: "This problem certainly has the potential of being one of the biggest headaches that the Society will face in the future years." How right he was!

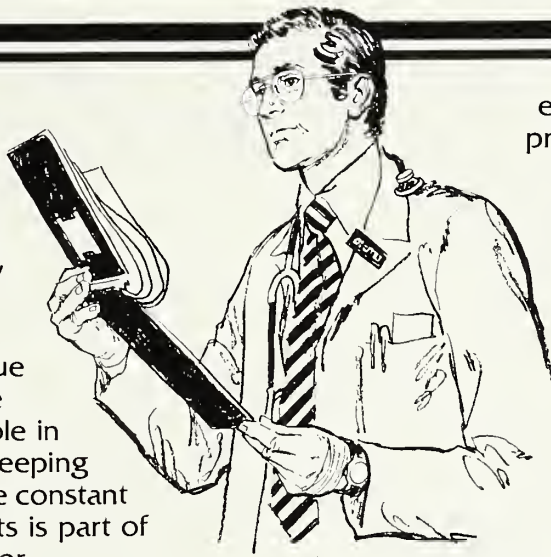
In spite of PSRO, HSA, and other big issues facing the Society during that year, however, Dr. Reynolds did encourage us with the words, "I can say to you that the North Carolina Medical Society symbolizes excellence in professionalism and is held in the highest respect throughout the state. Our forefathers have given us this heritage." I share with him that respect and feeling and know it to be true. It is up to each of us to carry that excellence forward into the future, not bowing to PSRO's or liability carriers or bureaucrats who would regulate and dictate the medical care of our profession. Your Medical Society is working hard for you to help you maintain that respect throughout the world.

Sincerely,

 M.D.
Marshall S. Redding, M.D.
President

The Everchanging Field of Medicine...

A doctor's study of medicine doesn't end with medical school. Every medical advance or new technique redefines the physician's role in some way. Keeping up with these constant developments is part of being a doctor.



Times do change...and this is especially true in the field of medicine.

Yet, there are some things in life that don't change. Accidents and serious illnesses still happen unexpectedly. And financial hardship often follows — especially if you're kept away from work for a while.

For that reason, Disability Income Protection for younger doctors was developed. As a member of the North Carolina Medical Society, you are

eligible for this important protection which can help replace lost income if a covered accident or illness keeps you from your practice.

The regular monthly benefits payable under this plan may be used to cover any expenses you decide on — medical bills, groceries or even car payments.

If you are under the age of 55 and active full time in your practice, find out more about this valuable protection by returning the coupon below. Mutual of Omaha — underwriter of this plan — will provide prompt, courteous service in furnishing full details of coverage.



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United of Omaha

MUTUAL OF OMAHA INSURANCE COMPANY
HOME OFFICE OMAHA, NEBRASKA

Mutual of Omaha Insurance Company
Mutual of Omaha Plaza
Omaha, Nebraska 68175

Please provide me complete information on the Disability Income Protection Plan available to members of the North Carolina Medical Society who are under age 55.

Name _____

Address _____

City _____

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Pinworms work the night shift



Artist's interpretation:

The nocturnal egg-laying of the female pinworm causes acute perianal itch...making children shift sleeplessly through the night.



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Promptly paralyzes pinworms and roundworms

Antiminth® (pyrantel pamoate) has a unique, rapid immobilizing effect on worms. Unlike mebendazole, which blocks glucose uptake—slowly “starving” helminths to death—Antiminth quickly acts on the neuromuscular junction to promptly paralyze parasites.

97% efficacy with a single dose

A single dose of Antiminth delivers rapid clinical and parasitological cures, “Single doses... showed high overall efficacy against *Enterobius vermicularis* (97.2%) and *Ascaris lumbricoides* (97.5%).”¹

Simple, well tolerated therapy

Antiminth offers ease of administration and patient tolerance. ...when compared to the other single dose agents available, [Antiminth] has the advantage of being non-staining and may be better tolerated.”²

The dosage form children like

Antiminth is available as a pleasant tasting, caramel-flavored oral suspension. Effective in just



one dose against pinworm and roundworm—in both children and adults—Antiminth is easy-to-administer and easy-to-take.

Respected around-the-world

In some parts of the world, large populations are afflicted with helminthic infections. Physicians in endemic areas have become experts on parasitic diseases—and have come to rely on Antiminth for the rapid cure of infestations. Antiminth is recommended as an agent of first choice for pinworm and roundworm by leading medical authorities.³

Warnings

Usage in Pregnancy Reproduction studies have been performed in animals and there was no evidence of propensity for harm to the fetus. The relevance to the human is not known.

There is no experience in pregnant women who have received this drug.

The drug has not been extensively studied in children under two years; therefore, in the treatment of children under the age of two years, the relative benefit/risk should be considered.

Precautions

Minor transient elevations of SGOT have occurred in a small percentage of patients. Therefore, this drug should be used with caution in patients with pre-existing liver dysfunction.

Adverse Reactions

The most frequently encountered adverse reactions are related to the gastrointestinal system. Gastrointestinal and hepatic reactions: anorexia, nausea, vomiting, gastralgia, abdominal cramps, diarrhea and tenesmus, transient elevation of SGOT.

CNS reactions: headache, dizziness, drowsiness, and insomnia. Skin reactions: rashes.

Dosage and Administration

Children and Adults Antiminth Oral Suspension (50 mg of pyrantel base/ml) should be administered in a single dose of 11 mg of pyrantel base per kg of body weight (or 5 mg/lb.); maximum total dose 1 gram. This corresponds to a simplified dosage regimen of 1 ml of Antiminth per 10 lb. of body weight. (One teaspoonful = 5 ml.)

Antiminth (pyrantel pamoate) Oral Suspension may be administered without regard to ingestion of food or time of day, and purging is not necessary prior to, during, or after therapy. It may be taken with milk or fruit juices.

References 1. Pitts NE, Migliardi JR: *Clinical Pediatrics* 13:87, 1974. 2. Modell W: *Drugs of Choice* 1980-1981. C. V. Mosby Co., St. Louis, 1980, p. 362. 3. Goodman LS, Gilman A: *The Pharmacologic Basis of Therapeutics*, 6th edition, MacMillan Publishing Co., Inc., New York, 1980, p. 1032.



Pfipharmecs Division

Pfizer Inc. New York, N.Y. 10017

Prescribe Antiminth® Suspension
(pyrantel pamoate) 50 mg pyrantel base/ml

Cures pinworm and roundworm fast...with a single dose

Toxic Encounters of the Dangerous Kind

THE BADDEST SEED — RICIN POISONING

Have you ever fantasized about what your ancestors were doing several hundred years ago? The Renaissance, for instance. I can picture my forebears quite clearly — they were Florentine purveyors of poisons. It was a recognized profession then and these highly successful entrepreneurs were employed by all social classes, especially the ruling class. The toxic agents used in these endeavors probably included arsenic and poisonous plants. I do not know if “castor bean” poisoning (*Ricinus communis*) was popular then, but it would have been a great toxin to use — very low overhead involved in its production, very efficient killing potential, can be easily hidden in food, etc., only small amounts needed to eliminate the “contractee,” large profits, many advantages.

The castor bean plant (AKA castor oil plant) is a crop and garden plant in many parts of the United States — especially the South and California. The plant can readily be grown indoors and castor bean seeds are readily available from mail order garden companies and garden supply centers. This plant may be the most dangerous plant grown in the United States (if not, then it is a close second). It is a large annual with rather large showy, green, dark leaves and large woody, green stems. Probably all parts of the plant are toxic, but the seeds appear to contain the largest amount of toxin — *ricin*. Spiny seed pods form in clusters along spikes and contain small, plump, attractive glossy dark or mottled black or brown seeds with a pleasant taste. Needless to say, these are quite enticing to children.

Milligram for milligram, ricin is thought to be one of the top two or three deadliest poisons available (others as bad or worse include *abrin* — a similar phytotoxin found in the rosary pea and the jequirity bean, and of course *plutonium*). It is alleged that ricin is popular with the KGB because of its killing power in small quantities. How toxic are these seeds,

you ask? If ingested, 2-6 castor bean seeds can be fatal for an adult and 1 or 2 seeds for a child. The seeds must be chewed before the toxin, ricin, is released. If the castor beans are swallowed whole, systemic toxicity is unlikely because the seed coat is quite hard and tends to prevent absorption of the ricin. Therefore, the degree of mastication and digestion determines the amount available for absorption.

The mechanism of toxicity of ricin is not well understood. Technically, ricin is a phytotoxin (AKA toxalbumin). Phytotoxins are complex protein molecules produced by some plants and are very toxic generally. Some believe these toxins act as proteolytic enzymes which break down critical proteins. In vitro, as little as 10 molecules of ricin specifically bound to a glycoprotein surface receptor of HeLa cells in culture is all that is needed to kill the cell. Current studies suggest that ricin acts to prevent cell reproduction in the wall of the intestine. Earlier literature cited red blood cell hemolysis as the major toxic event, but apparently this phenomenon occurs only when the material is injected. The clinical features of this poisoning are not pleasant and certainly give no clue to the diagnosis. There is a latent period, following the ingestion of chewed seeds, that can vary from two to more than 24 hours. Early features are due to irritation of the gastrointestinal tract: severe burning pain in the throat, nausea, vomiting, diarrhea, severe abdominal cramps. The gastroenteritis is typically hemorrhagic. Later findings include stupor, seizures, cardiovascular collapse, uremia and death. Patients who survive can be quite ill for three to 10 days.

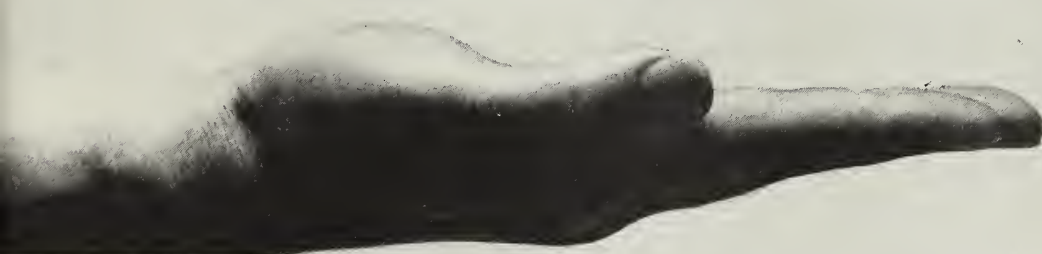
As you suspected, because there is no antidote for ricin poisoning, the management is entirely symptomatic. Strict attention to fluid and electrolyte balance is the most critical part in management. Emergency treatment, following ingestion, consists of gastric emptying, and liberal use of activated charcoal. Appar-

(Continued on page 589)

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- From Burroughs Wellcome Co. – the discoverer and developer of allopurinol
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your patient receives the original allopurinol.*



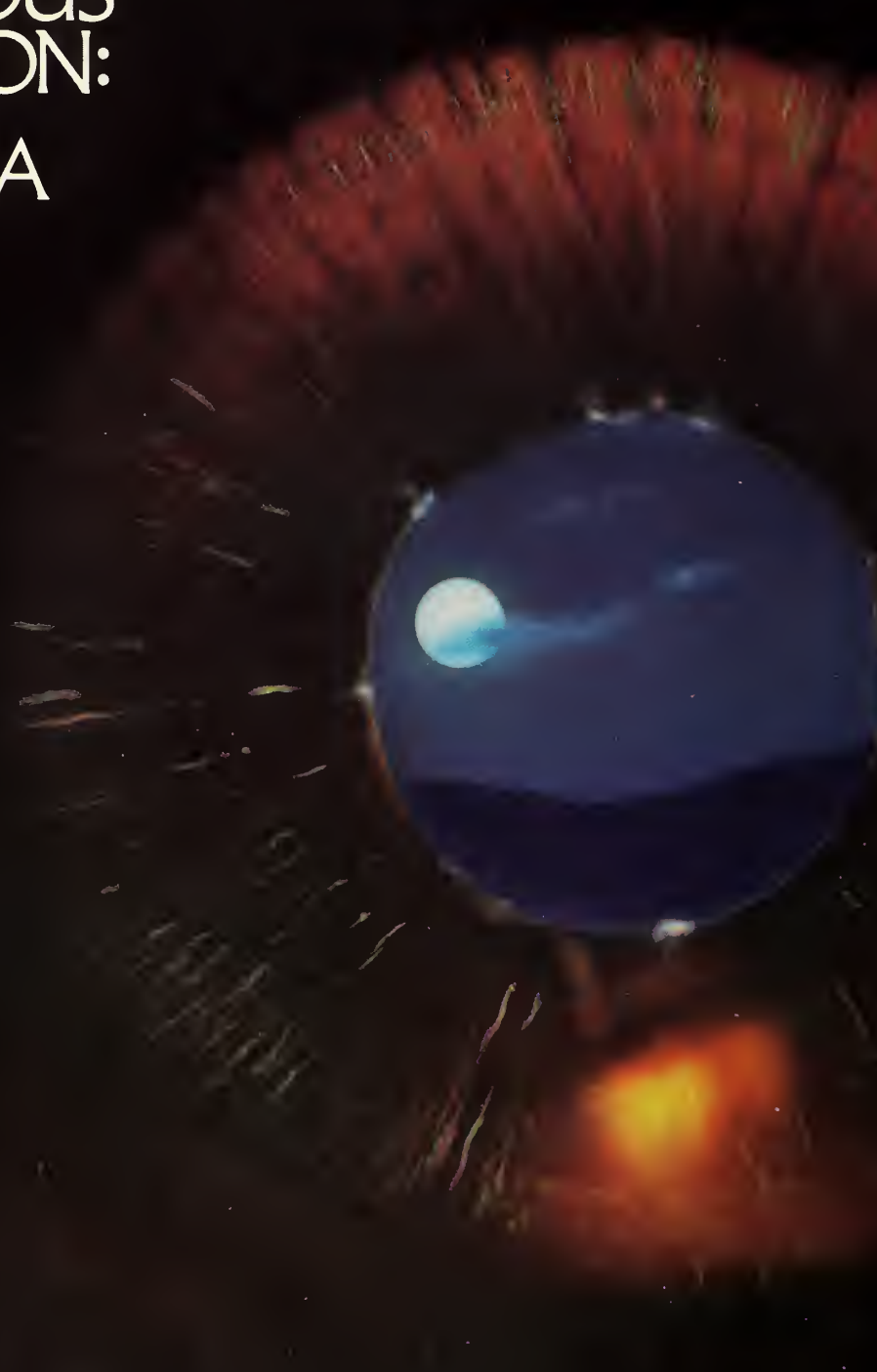
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ONE OF THE VITAL SIGNS OF ANXIOUS DEPRESSION: INSOMNIA

Others to look for:

agitation
anorexia
feelings of guilt
and worthlessness
fatigue
palpitations
headache
vague aches
and pains
sadness
psychic and
somatic anxiety

Artist's conception,
looking out from the human eye
as conceived in a schematic model.



LIMBITROL GIVEN H.S.: ONE OF THE VITAL SPECIFICS OF TREATMENT

Limbitrol brings a special—and specific—quality of relief to most anxious depressed patients. Insomnia, for example, responds with particular promptness. Other symptoms likely to respond within the first week of treatment include anorexia, agitation and psychic and somatic anxiety. And, as the depression and anxiety are alleviated, in many cases so are such related somatic symptoms as headache, palpitations, and various vague aches and pains.

**Limbitrol given once daily h.s.
may be the best approach**

Many patients respond readily to a single bedtime dose of Limbitrol, a convenient schedule that may enhance compliance and helps relieve the insomnia associated with anxious depression. Limbitrol also offers a choice of other regimens: t.i.d., or a divided dose with the larger portion h.s. In all cases, caution patients about the combined effects with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as driving or operating machinery.

in moderate depression and anxiety

Limbitrol® IV

Tablets 5-12.5 each containing 5 mg clordiazepoxide and 12.5 mg amitriptyline
(as the hydrochloride salt)

Tablets 10-25 each containing 10 mg clordiazepoxide and 25 mg amitriptyline
(as the hydrochloride salt)

Specific therapy with h.s. dosage convenience

Please see summary of complete product information on following page.

LIMBITROL® TABLETS Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses). Myocardial infarction and stroke reported with use of this class of drugs. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs:

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10. Prescription Packs of 50.

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ROCHE PRODUCTS INC.
Manati, Puerto Rico 00701

(continued from page 584)

ently, charcoal binds ricin quite effectively.

I was musing recently — what can I do if I retire? — be a consultant to one of our national security agencies? Or possibly help the family (or should I say THE FAMILY)? In any event, I could do wonders with a small cache of ricin — become a professional whatever and become one

with my ancestors and possibly fulfill my Karma.

Ronald B. Mack, M.D.

Associate Professor of Pediatrics
Bowman Gray School of Medicine
and Chairman, Committee on
Accidents and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics



“I told him to get help for his drinking. He told me to go to hell.”

Too often, the hardest part of treating alcoholism is persuading patients to seek help. Many patients refuse because they think their problem is “just a little one.”

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Editorials

FROM COLD FEET TO HOT HANDS

Chief Complaint: My husband says my feet are too cold in bed at night.

Rarely do husbands urge wives to see doctors. Usually it is the wife who does the insisting and the husband the resisting. Unfortunately, cold feet often defy explanation although there are exceptions. Cigarette smokers and diabetics are likely to be among sufferers as are those with scleroderma and systemic lupus erythematosus. The young woman in question had a coarctation of her aorta and a bicuspid aortic valve with insufficiency. Surgical correction of the coarctation relieved her husband's complaint but did little for her regurgitation.

Another frequent nocturnal complaint is the calf or arch muscle cramp, more frequent in winter and more often suffered by women and by patients with kidney failure or myxedema. Even in summer the latter beg for blankets as others swelter and like "Mad Dogs and Englishmen go out in the midday sun." Something has gone wrong with their temperature control centers, correctible only by renal transplantation or therapeutic thyroid hormone.

In the early years of dialysis, not that long ago but ancient history for some, nephrologists were often perplexed by sudden fevers to 101-102° F in patients just completing acute hemodialysis, fearing that the membrane was not really impermeable to bacteria and that septicemia had resulted. Many a sterile blood culture resulted. Then it was realized that the fever must be a rebound provoked by the dialysis of some substance(s) responsible for the lower temperature of disease.

While unidentified substances appear to be present in excess in patients with renal failure, deficiency of a specific compound, thyroxine, is obviously responsible for myxedematous hypothermia. In hypothyroid patients the cardiac output is diminished, the pulse is slowed, the skin is thickened and peripheral vasoconstriction, at times leading to correctable hypertension, apparent. Even the nails are afflicted, brittle and slowly growing. By contrast, the hyperthyroid individual tolerates heat poorly, has a hyperdynamic circulation characterized by tachycardia and a wide pulse pressure and is often quite agitated. Because of the threefold increase in peripheral blood flow, hands are hot and nails thin, often with the characteristic excavation emphasized by Plummer.

Hot hands may be of considerable differential diagnostic importance in deciding what is going on with a

mildly wide-eyed, anxious young matron with tachycardia and a thyroid nodule or modest generalized enlargement of the gland. If her palms are cool and clammy and her husband complains of her cold feet under the covers, it isn't hyperthyroidism.

What of nocturnal leg cramps in healthy young or middle-aged women? There is a temperature gradient from the warmer core, measured with oral or rectal thermometer, to the cooler extremities of as much as 10-15° C¹ so down booties or knee socks might be appropriately recommended rather than the quinine so commonly prescribed. It would be interesting to know whether these cramps are more frequent during the ovulatory or luteal phases of the menstrual cycle. After all the rhythm method of contraception is based on the increased body temperature induced by the secretion of progesterone at mid-cycle.

Temperature has a circadian as well as monthly rhythm so that we are all colder at night whether the furnace is turned down or not. But it is difficult for some patients to accept the 0.4° C daily amplitude of oral temperature.² Doesn't the usual household thermometer have a blue or red arrow fixed eternally and absolutely at 98.6° F? Perhaps this fixed belief is related to similar loyalty to red-letter editions of the New Testament. Then, too, there are those who know when they have a fever even without measuring and who seek antibiotic therapy for what must be an infection. They need to be reminded that measure, particularly when confirmed, validates a symptom transforming it into its objective manifestation, the sign.

This matter is one of considerable historical importance in science, for as Kuhn³ has noted, "Before the thermometer had become unequivocally a laboratory instrument rather than an experimental subject, thermometric reading had to be seen as the direct measure of 'degree of heat,' and sensation had simultaneously to be viewed as a complex and equivocal phenomenon dependent upon a number of different parameters." Substitute clinical or household for experimental and remember that many features, physical and behavioral, must be analyzed if the vagaries of temperature are to be interpreted accurately in the patient's behalf.

J.H.F.

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3. Kuhn TS. The function of measurement in modern physical science. *Isis* 1961;52:161-190.

BROWNE SPOTS

"That temperamental dignotions, and conjecture of prevalent humours, may be collected from spots in our nails, we are not averse to concede. But not yet ready to admit sundry divinations . . . that spots in the top of the nails do signify things past; in the middle, things present; and at the bottom, events to come."

Sir Thomas Browne

The works of the 17th Century English physician and antiquarian, Sir Thomas Browne (1605-1682), were particularly loved by Sir William Osler. *Religio Medici* was especially favored and was included along with the Bible, Shakespeare, Montaigne, Plutarch, Marcus Aurelius, Epictetus, Emerson, Oliver Wendell Holmes' *Breakfast-Table Series* and Don Quixote in the bedside library he recommended for medical students. A list for moderns would certainly include the Bible, Shakespeare and Don Quixote but the others sadly have been vanquished to the library, the concern primarily of 20th Century antiquarians.

It is too bad. *Religio Medici* is the testimonial of an astute, observant and scholarly physician who faced both ways in a period of dynamic transition. He was skeptical about the conventional medical wisdom of his day, appreciated the need for verification to establish facts and gently but firmly rejected frozen dogmas. Yet in keeping with most of his contemporaries he believed in witches and was quite unable to cultivate disbelief, an essential attribute of the modern scientist and physician. Like many of his colleagues, he held that a denial of the existence of witches led to a denial of the reality of the devil, certainly an untenable position in the century that saw the regicide of Charles I, the Commonwealth and the publication of *Paradise Lost* with its faustian Satan. But as his comment above indicates, he was skeptical of divination and aware that the inner man might be read from outer signs. For the 17th Century was also the time of William Harvey, of Sir Isaac Newton, who practiced alchemy, and of the founding of the Royal Society.

Since Browne, we have learned a great deal about fingernails but our knowledge is almost as unsystematic as that he displayed in *Pseudodoxia Epidemica; Enquiries into very many commonly received Tenets*

and commonly presumed Truths, a volume later called *Vulgar Errors*. Look only at the transverse white lines the nails occasionally exhibit in illness. Their causes are manifold and each medical subspecialty has its own eponym, after the physician who described it first in his field. The nephrologist calls them Muehrcke's lines when they occur in the nephrotic syndrome or in renal failure, the neurologist Mees' lines because they may be present in arsenical neuritis (incidentally appreciated first by Sabin nearly two decades before Mees) and the dermatologist Beau's lines (leukonychia striata) attributable to defective keratinization of the nails.

Since Browne described spots not lines it would be neither proper nor historically accurate to throw out all our eponyms in favor of Browne's lines. Still he really deserves a place somewhere in the name of some syndrome of some sign. Perhaps spots in the psoriatic fingernail though they aren't brown could be called Browne spots. Because the vulgar error of treating such onychopathy with x-ray, the presumptive diagnosis being onychomycosis, was once common, Sir Thomas might be pleased, hopeful that a vulgar diagnostic error had been laid to rest.

In *Pseudodoxica* (in which the introductory quotation is found) he also devoted considerable attention to fingers, particularly to the ring finger, noting that "an opinion there is . . . presumably a cordial relation that a particular vessel, nerve, vein or artery thereto from the heart, and therefore that especially hath the honour to bear our Rings." Such practice he observed was followed by Christian and heathen and further commented that "this (finger) is seldom or last of all affected with gout, and when that becometh nodous, man cannot continue long after." But he adds, "Notwithstanding all which we remain unsatisfied, nor can we think the reasons alleadged sufficiently establish the prehemineny of this Finger."

Knowing his anatomy, Browne was aware of no "peculiar vessel in this Finger." But this has not prevented the continuing "prehemineny" of the third finger left hand in matters hymeneal. The ancients considered that finger closest to the heart and so must we, reinforced by the wisdom of the ages.

J.H.F.

MOSES BEN MAIMM (Maimonides) [1135-1204]

Another major principle of bodily health, [physicians] state, is that as long as a person labors and becomes greatly fatigued and does not satiate [himself by overeating] and keeps his bowels soft, no illness will befall him and [on the contrary] his strength becomes fortified even if he eats detrimental foods.

Mishneh Torah, "Halchoth De'oth," Ch. IV, No. 14

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From the Desk of the Managing Editor

THE NORTH CAROLINA MEDICAL JOURNAL: THAT WHICH YOU MIGHT NOT HAVE THOUGHT ABOUT

Robert W. Prichard, M.D.

The following editorial was presented May 6, 1982, in Pinehurst, N.C., as part of the *Journal's* Report to the House of Delegates.
—A.A.H.

Most of us come along through medicine thinking of journals as the place where one gets authoritative information about the latest in medicine. There are other places where one gets casual information, such as the evening national news and the *National Enquirer*. But over the last twenty years or so, journals have differentiated along various pathways. The true state medical journal, such as ours, has acquired characteristics which might escape someone who isn't devoted to studying the species.

A person wanting to know what occupied the energies and pocketbooks of North Carolina physicians in 1882 can turn only to the Transactions of our Society. In the year 2082, those unvaporized will have only the *North Carolina Medical Journal*. There is no other place in which the state of the profession can be sampled as readily. This archival function of the *Journal* is priceless. If we don't provide for it, no one else will, or should. If it costs each of us \$1.10 a month to do so, could we be spending that sum on a better purpose?

During the past year, the *Journal* has run articles on the child abuse problem in Durham County, Burkitt-type lymphoma as seen in Chapel Hill, the implications of changes in North Carolina statutes dealing with the right to die naturally, medical care in the state's jails, how patients get to see the doctor in Winston-Salem. Is there another publication which would document these important concerns of our profession as a distinctly North Carolina entity? People in Virginia and South Carolina have their own environmental and legal quirks to deal with and, like us, have their own medical journal to record how they come to grips with them.

On the historical side, we have heard about the development of the Raleigh Academy of Medicine, North Carolina medical curiosities, civil war medicine in the state, the April 1849 state medical convention in Raleigh, and the newly opened Vierling House in Old Salem, home of one of the last of the German-born doctors of that town. Some of these things might have found their way into such places as the *North Carolina Historical Review*, but most doctors would not have

seen them in that excellent publication. Furthermore, most of the historical material which runs in the *Journal* would not find its way into the *Review* for various reasons.

The news notes from our four medical schools could no doubt be reconstructed from the records of the schools and from newspaper files, but there would be no single place where our professional descendants could get a panoramic view of what goes on in our schools month by month.

Various committee reports and accounts of the Executive Council proceedings appear regularly in the *Journal*. They also find a home in the Society office files. Members would generally find themselves unwilling to go to that source and would not keep current as easily as they now can through a quick scan of the *Journal*.

We need to look at the *Journal* through modern eyes, accepting it as a state journal intended for the needs of North Carolina doctors. We must ask ourselves if our money is well spent, recognizing the small amount of money it is costing us, subsidized as the *Journal* is by advertisers. Finally, we need to ask ourselves what would replace the *Journal* if it were no longer published, unless we are willing to say that what we do is not worth recording and reading about in our capacity as North Carolina physicians in 1982.

ROCKY MOUNTAIN SPOTTED FEVER

A provisional total of 1,170 cases of Rocky Mountain spotted fever (RMSF) occurring in the United States in 1981 have been reported to CDC. On the basis of this figure, the incidence rate of RMSF in 1981 for the United States as a whole was 0.51 cases/100,000 population.

The South-Atlantic states accounted for 671 (57%) of the reported cases. The highest rates of RMSF were for North Carolina (301 cases, 5.06/100,000), South Carolina (102 cases, 3.22/100,000), Oklahoma (99 cases, 3.19/100,000), Virginia (105 cases, 1.93/100,000), Tennessee (82 cases, 1.78/100,000), Maryland (66 cases, 1.55/100,000), and Arkansas (35 cases, 1.53/100,000).

States submitted case-report forms on 1,059 (91%) of the reported cases. Of these, 372 (35%) were confirmed by complement-fixation (CF), indirect fluorescent-antibody (IFA), indirect hemagglutination (IHA), latex-agglutination (LA), or microagglutination (MA) tests; isolation of spotted fever group rickettsiae; or fluorescent-antibody staining of biopsy or autopsy specimens. An additional 129 patients (12%), whose specimens reacted positively in the Weil-Felix agglutination test, but were not tested by other

methods, were designated as having "probable" cases. The other 558 cases (53%) were reported on the basis of clinical diagnosis alone. Sixty percent of the patients were male, 53% were persons <20 years of age, and 92% were white.

Ninety-six percent of the patients became ill between April 1 and September 30. Symptoms reported included fever (98%), headache (90%), rash on torso (85%), and rash on palms and hands or soles of feet (60%). Rash was significantly more commonly associated with laboratory-confirmed (89%) than with unconfirmed (82%) cases ($p < 0.01$); otherwise, the prevalence of symptoms was similar for these two groups of patients. Seventy-nine percent of patients were hospitalized during their illness. Sixty-seven percent of the patients for whom exposure information was available reported a tick bite or attachment within 14 days before onset of illness. The case-fatality rate (3.4%) was higher for blacks (6.7%) than whites (3.0%), higher for persons ≥ 30 years of age (4.6%) than for younger individuals (2.8%), higher for persons with unknown or no tick exposure (4.4%) than for persons reporting a tick bite or attachment (2.6%), and higher for persons not reporting treatment with tetracycline or chloramphenicol (8.0%) than for those who received such antibiotic therapy (2.5%).

Twenty-five percent of patients for whom the history was available reported travel outside of the county of residence within 14 days before onset of illness.

There were 301 reported cases of RMSF in North Carolina in 1981, 6% fewer than the record 321 cases

reported in 1980. Seven deaths were attributable to RMSF in 1981 compared to 17 in the state in 1980.

In cooperation with the Centers for Disease Control, the Division of Health Services requested that a new surveillance form be completed on each case of RMSF reported in 1981. Mainly through the efforts of local health department personnel following up on these cases with attending physicians, these forms were completed on 284 (94%) of the reported cases.

A new feature of the 1981 form was the classification of cases into "confirmed," "probable," and "not confirmed" categories based on serologic or tissue diagnostic study results for the reported cases. Of the 284 cases for which data were collected, 130 (46%) were classified as confirmed, 21 (7%) as probable, and 133 (47%) as not confirmed.

Interestingly, while there was no apparent difference between the confirmed/probable group and the not-confirmed group in the percentage of RMSF patients who could recall a tick bite or attachment within two weeks preceding onset of illness (61% of both groups), there was a significant difference ($p < 0.005$) between the percentage of confirmed/probable cases that required hospitalization (80%) and the percentage of not-confirmed cases that were hospitalized (64%). This difference, of course, may simply reflect the difference in likelihood of performance of diagnostic tests on non-hospitalized patients compared with hospitalized patients. Sixty percent of hospitalized cases were confirmed or probable whereas 39% of non-hospitalized cases fell into this category.

Figure 1. Rocky Mountain spotted fever (tick-borne typhus), reported cases per 100,000 population, by year, United States, 1955-1981.



*Provisional

Reprinted from Morbidity and Mortality Weekly Report, Vol. 31, No. 19 and Epidemiologic Notes & Communicable Disease Morbidity Report, No. 82-3.

(continued from page 594)

An important change in the method of conducting national surveillance of RMSF in 1981 was the adoption of a new case-report form that provides information about symptoms, hospitalization, treatment, tick exposure and travel, and also defines stricter criteria for laboratory confirmation of cases. A clinically compatible case with diagnostic serologic results determined by CF, IFA, IHA, LA, or MA is considered confirmed (a case with positive titers obtained by the Weil-Felix reaction is only considered a probable case). Patients from whom the causative agent is isolated, or who have positive fluorescent-antibody staining of tissue specimens, are also considered to have confirmed cases. These stricter criteria are responsible for the lower percentage of cases confirmed by laboratory testing in 1981 compared with 1980 (35% versus 62%, respectively). It should be emphasized that confirmation of RMSF is of epidemiologic importance but cannot usually be expected to occur before days 10-14 after onset of illness. Therefore, diagnosis must rely on clinical (fever, headache, rash, myalgia) and epidemiologic (tick exposure) criteria, and treatment must be initiated before laboratory confirmation is available.

Prevention of RMSF entails frequent inspection of persons for ticks when exposure is likely. (Ticks do not usually transmit infection until they have been attached for several hours.) Ticks are best removed by grasping the tick with tweezers as close as possible to the point of attachment and by pulling slowly and steadily. If tweezers are not available, fingers protected with facial tissue may be used. If bare hands touch the tick during removal, the hands should be washed thoroughly with soap and water, because tick secretions can be infective.

A vaccine against RMSF is in the developmental stage, but is not expected to be available in the near future.

Editorial Note: Following the rapid rise in the 1970s of RMSF incidence in the United States, infection rates since 1977 have remained about the same (Figure 1). The predominant occurrence of RMSF in the Southeastern states and the higher incidence for younger persons, males and whites have remained unchanged in recent years. The case-fatality rate, which has fluctuated between 3% and 8% since 1970, indicates that RMSF remains a serious illness that requires prompt diagnosis and early treatment with tetracycline or chloramphenicol. Risk factors that have been associated with fatalities include age ≥ 30 years, male sex, black race, absence of skin rash, failure to obtain a history of exposure to ticks, and lack of appropriate antibiotic treatment.¹ A history of travel to an area in which infected ticks are endemic may be critical to the diagnosis of RMSF when a patient is seen in an area where the disease does not commonly occur.

References

1. Hattwick MA, O'Brien RJ, Hanson BF. Rocky Mountain spotted fever: epidemiology of an increasing problem. *Ann Intern Med* 1976;84:732-9.

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PROBLEMS WITH CARBONLESS COPY PAPER

The Occupational Safety and Health Administration of the U.S. Department of Labor has requested any information that might be available from the medical profession of this country to suggest an unusual incidence of health problems stemming from the use of carbonless copy paper. In Sweden there have been reports which suggest that persons working with carbonless copy papers have developed complaints of irritation of the eyes, mucous membranes or skin and there have been some allegations of an occupational

relationship. No cases have been reported outside of Sweden. In particular, there have been no cases reported from this country. Patch tests, prick tests, positive eye provocation of inhalation tests with substances used in carbonless copy paper have never been reported.

Any physician who has noticed an unusual frequency of irritation of the eyes, mucous membranes or skin that seem to be associated with the use of carbonless copy paper should notify the Division of Scientific Policy, Richard J. Jones, M.D., Director at AMA Headquarters, 535 North Dearborn Street, Chicago, Illinois 60610.

When a person eats, he should always be sitting in his place or reclining on the left side. He should not walk nor ride nor exercise nor agitate his body, nor should he promenade until the food is digested in his intestines. Any one who promenades [immediately] after his meal or who fatigues himself brings upon himself serious and grave illnesses.

Mishneh Torah, "Hilchoth De'oth," Ch. IV, No. 3 (tr. by Fred Rosner in *Annals of Internal Medicine* 62:372, 1965)

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What? When? Where?

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME programs sponsored or cosponsored by these schools automatically qualify for AMA Category I credit toward the AMA's Physician Recognition Award, and for North Carolina Medical Society Category A credit. Where AAFP credit has been requested or obtained, this also is indicated. 2. The "place" and "sponsor" are indicated for a program only when these differ from the place and source to write "for information."

August 9

"Biofeedback for the Psychiatric Patient: Problems and Solutions"

Place: Asheville

Fee: \$50

Credit: 4 hours

Info: Forrest L. Smith, Project Coordinator, DUMC, Continuing Medical Education in Psychiatry, Box 3253 DUMC, Durham, NC 27710, 919-684-5050

August 28-29

"Dermatology for the Non-Dermatologist"

Place: Wilmington

Fee: \$75

Credit: 7 hours (AAFP applied for)

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

September 8

"Cancer Day 1982"

Place: Greenville

Fee: \$50

Credit: 6 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

September 10-11

"Intraocular Lens Implantation Workshop"

Place: Chapel Hill

Fee: \$50

Credit: 16 hours

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

September 14

"Management of Acute and Chronic Pain"

Place: Fayetteville

Credit: 6 hours, AAFP

Info: Mary Henley, Cape Fear Medical Symposium, PO Box 64699, Fayetteville, NC 28306, 919-323-1152

September 12-16

"Family Medicine Review"

Place: Winston-Salem

Fee: \$345

Credit: 40 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

September 23-26

"Urologic Malignancies"

Place: Pinehurst

Credit: 16 hours

Info: Linda Mace, Assembly Secretary, Box 3707, Duke Hospital, Durham, NC 27710

September 24

"Fourth Annual Health Law Forum"

Place: Greenville

Fee: \$100

Credit: 7 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

September 28

"The Role of Physician and Minister in Patient Care"

Place: Greenville

Fee: \$25

Credit: 3 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

October 6

"Surgical Update for Non-Surgeons"

Place: Greenville

Fee: \$50

Credit: 6 hours, AMA Category I and AAFP

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

October 6-7

"22nd Annual Charlotte Postgraduate Seminar"

Place: Charlotte

Fee: None

Credit: 12 hours, AAFP

Info: Michael N. Leblang, M.D., Eastway Medical Clinic PA, 4101 Central Avenue, Charlotte, NC 28205, 704-537-0020

October 8

"Seminar in Medicine"

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

October 22-23

"Nutrition and Cancer: The 15th Annual Malignant Disease Symposium"

Place: Chapel Hill

Fee: \$125

Info: Mimi Minkoff, Cancer Research Center, Box 30, MacNider Building, Chapel Hill, NC 27514

October 27

"Calcium Antagonists: A New Era of Therapy for Cardiovascular Diseases"

Place: Greenville

Fee: \$50

Credit: 6 hours, AMA Category I and AAFP

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

November 10

"Developmental Disability in the Neonate and Infant: Causes and Rehabilitation"

Place: Greenville

Fee: \$25

Credit: 3 hours, Category I; 3 hours, AAFP

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

Out-of-State-Southeastern Region**August 5-7**

"The 4th Annual MCV Pediatric Primary Care Conference: Pediatrics at the Beach"

Place: Virginia Beach, VA

Info: Kathy E. Johnson, Box 48, MCV Station, Richmond, VA 23298, 804-786-0494

August 2-7

"Tenth Annual Beach Workshop"

Place: Myrtle Beach, SC

Fee: \$175

Credit: 20 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

August 13-14

"EKG Interpretation and Arrhythmia Management"

Place: Nashville, Tenn

Fee: \$245

Credit: 13 hours, Category I; 13 hours, AAFP

Info: IMEC, Division of Postgraduate Education, 64 Inverness Drive East, Englewood, Colo 80112, 800-525-8651

September 13-15

"Nutrition and Blood Pressure Control"

Place: Arlington, VA

Info: International Life Sciences Institute, Suite 600, 900 17th St, NW, Washington, DC 20006, 202-659-0074

September 13-16

"International Surgical Frontiers"

Place: Atlantic City, NJ

Info: Sally Cox, Coordinator of Continuing Education, 1982 Annual Meeting, US Section International College of Surgeons, 1516 North Lake Shore Drive, Chicago, Ill 60610

September 24-26

"Southern Medical Association Postgraduate Meeting"

Place: New Orleans, LA

Info: Jeanette Stone, Southern Medical Association, PO Box 2446, Birmingham, Ala 35201

October 4-8

"International Symposium of Diagnostic Imaging"

Place: Bermuda

Fee: \$475

Credit: 25 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology — Box 3834, Duke University Medical Center, Durham, NC 27710

October 25-29

"Dermatology for Non-Dermatologists"

Place: Bermuda

Fee: \$325

Credit: 14 hours, AMA Category I and AAFP

Info: "Dermatology for Non-Dermatologists," PO Box 2987, Duke Medical Center, Durham, NC 27710, 919-684-2504

October 30-November 2

"76th Annual Scientific Assembly"

Place: Atlanta, GA

Info: Southern Medical Association, PO Box 2446, Birmingham, Ala 35201, 205-323-4400

November 4-7

"Current Controversies in Adult and Pediatric Urology"

Place: Chicago, Ill

Credit: 33 hours

Info: Linda Mace, PO Box 3707, Duke Medical Center, Durham, NC 27710

The items listed in this column cover the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh 27611, two months prior to the month in which they are to appear.

News Notes

University of N.C. School of Medicine & N.C. Memorial Hospital

The Trauma Center at North Carolina Memorial Hospital has been designated as a site to test a new type of "artificial blood" which may prove to be beneficial for patients, such as Jehovah's Witnesses, who refuse blood transfusions for religious reasons.

The "artificial blood," a chemical compound distributed under the brand name Fluosol-DA, is being evaluated at about 16 centers throughout the country in clinical trials sanctioned by the U.S. Food and Drug Administration.

The compound is designed to replace, to some extent, the oxygen-carrying capability of hemoglobin found in human blood, according to Dr. Herbert Proctor, director of the Trauma Center. It looks like milk and is made of a fluorinated hydrocarbon that will dissolve and carry a large amount of oxygen.

The clinical trial at N.C. Memorial is designed to see if Fluosol is a more effective substitute for blood than the balanced salt solution with starch that is the standard treatment for Jehovah's Witnesses requiring a transfusion. "We will be trying to determine who is and who is not a candidate for Fluosol," Proctor said.

Proctor said if the substitute is proven to be effective, it could be used at times when blood is in short supply such as combat and disaster situations.

Participants in the research project will all be volunteers who are patients at N.C. Memorial, have lost a significant amount of blood and will not accept a human blood transfusion. Half of the participants will receive Fluosol and half will receive the salt solution. The study will not be limited to trauma patients, Proctor said, and most participants will be Jehovah's Witnesses.

Proctor said the Trauma Center at N.C. Memorial

and the School of Medicine has a long-standing interest in improving oxygen delivery to the cells. Researchers at the Trauma Center have been investigating the effectiveness of a compound similar to Fluosol in animals for the past year.

Joining Proctor as investigators in the "artificial blood" study are Dr. Charles Watson, assistant professor of anesthesiology, and Dr. Robert Cefalo, professor of obstetrics and gynecology.

Residents in orthopaedic surgery at North Carolina Memorial Hospital have scored in the 96th percentile on the 1981 national Orthopaedic In-Training Examination.

Dr. Frank Wilson Jr., professor of surgery and chief of the division of orthopaedics, said 13 residents took the test late last year. The group achieved its high marks in comparison with all other orthopaedic residency programs in North America.

The In-Training Examination is designed and administered by the American Academy of Orthopaedic Surgeons to help residents check their progress in comparison with their peers and to help residency programs assess their teaching effectiveness.

The 1981 examination was given to 2,768 residents in the United States and Canada. It consisted of 270 questions in 10 categories, including hand surgery, anatomy, trauma, biomechanics and rehabilitation.

Members of the graduating class of 1972 have established a fund to provide scholarships for students in the School of Medicine of the University of North Carolina at Chapel Hill.

The establishment of the fund was announced by Drs. Thomas G. Irons and Howard S. Kroop. The two members of the class of 1972 presented \$7,500 to Dr. Stuart Bondurant, dean of the School of Medicine, and pledged that the class would double the gift within the next year.

Irons is from New Bern and Kroop is from Woodbury, N.J.

"It is no exaggeration to say that I can speak on behalf of generations of medical students yet to come in expressing my appreciation and that of the School of Medicine for the generosity the members of the class of 1972 have shown in this gift," Bondurant said.

"This action is important both for itself and for its potential as a model."

Financial aid provided by the fund will be given in the basis of need, Bondurant noted.

Dr. Mary Ellen Jones, Kenan professor and chair of biochemistry at the School of Medicine, received the Wilbur Lucius Cross Medal of the Yale Graduate Association May 24.

The medal was established in 1966 to be awarded to graduates of the Yale Graduate School for outstanding achievement in some phase of activity in which Dean Cross excelled.

Jones received her Ph.D. from Yale in 1951. She has chaired the Department of Biochemistry and Nutrition since 1978.

Everett Nordstrom, a fund raising veteran who has directed recent successful campaigns for the University of North Carolina at Chapel Hill, has been named executive director of the Medical Foundation of North Carolina, Inc.

His appointment, effective May 1, was announced by Hector MacLean, President of the Foundation. Nordstrom succeeds Emory S. Hunt, who retired July 1, 1982.

Since 1970, Nordstrom has been senior director of Ketchum, Inc., a fund-raising consulting firm headquartered in Pittsburgh. In this capacity he directed the Carolina Challenge, which raised close to \$29 million in endowment funds for UNC-CH, and the Student Activities Center campaign, which has passed the \$24 million mark.

A 1947 graduate of Clark University in Worcester, Mass., Nordstrom also attended Dartmouth College, and Plymouth State College.

He has been a secondary school and college instructor and coach, and he has held a number of administrative posts in business educational institutions.

From 1957-64, Nordstrom was associated with the Bendix Corporation, serving as director of personnel for the company's international division from 1960-64. Prior to joining Ketchum, he was a member of the administration of New Hampton (N.H.) School, where he was business manager, 1964-67, and director of development, 1967-70.

The Medical Foundation is a corporation separate from the University, chartered to raise and manage funds to benefit the School of Medicine and the North Carolina Memorial Hospital. Its board of directors is composed of business, professional and civic leaders from across the state. As executive director, Nordstrom will be responsible for the Foundation's organizational management, financial and total fund raising program.

"We are indeed fortunate to have a professional of Mr. Nordstrom's talent, experience and ability providing leadership for the Medical Foundation," said MacLean, a Lumberton banker.

Dr. Stuart Bondurant, dean of the UNC-CH School of Medicine, said: "Private support is becoming increasingly important to maintaining and enhancing the school's excellence in teaching, research and patient care. The Medical Foundation plays a vital role in securing this support, and thus is an important part of our enterprise.

"Because of Mr. Nordstrom's experience and success in managing fund raising activities at UNC-Chapel Hill and elsewhere, we are certain the Medical Foundation is in most capable hands."

Philip F. Sparling, professor of bacteriology, has been appointed chairman of the Part I Microbiology

Test Committee of the National Board of Medical Examiners. The board gives examinations to measure the knowledge and competency of medical students and physicians during their preparation for professional careers.

Donald Madison, associate professor of social and administrative medicine, has been awarded a stipend from the National Endowment for the Humanities to participate in a four week seminar titled, "Literary Perspectives on the Clinical Encounter." The seminar is one of a series for teachers in American law and medical schools who are concerned with improving their knowledge of the humanistic dimensions of their respective professions.

Frank C. Wilson, professor of surgery and chairman of the orthopaedics division in the School of Medicine, was elected to the American Board of Orthopaedic Surgery at the February meeting of the board in New Orleans.

John A. Ewing, professor of psychiatry and director of the Center for Alcohol Studies, presented a paper at an international conference on alcoholism, March 30, at Christ Church Hospital in Oxford, England.

Edward V. Staab, associate chairman and professor of radiology, was a great speaker at the University of Virginia's fifth annual postgraduate course/practical radiology update, May 2-6, in Charlottesville. Staab presented lectures titled, "Emergency Abdominal Imaging;" "Computed Tomography and Ultrasound examination of the pelvis in the non-obstetrical patient," and "Imaging the liver."

Art Coulter, professor of surgery and physiology, spoke on the medical consequences of nuclear war, at the ethics conference on "Decision-making in the 1980's Peace-making and Nuclear Policy" at the Southeastern Baptist Theological Seminary, April 21-22, at Wake Forest.

Linda King-Thomas, clinical assistant professor of occupational therapy, spoke on therapy in neurodevelopment April 22, in Augusta, Ga.

Gary B. Mesibov, associate professor of psychiatry with Division TEACCH, represented the TEACCH program at a series of regional conferences sponsored by the State of Texas for the study of various treatment approaches to autism. Texas is considering adopting a statewide autism program, and Division TEACCH—the first such program in the country—is considered as a model for the new Texas agency.

(continued to page 601)

East Carolina University School of Medicine

The School of Medicine graduated 36 physicians in May, the second class of students to receive their medical education at East Carolina University.

All of the students were from North Carolina. Six members of the class were women, and three were minorities.

Ten members of the graduating class selected ECU and Pitt Memorial Hospital as the site for residency training and will remain in Greenville for three to five years of study depending on the specialty chosen.

The Class of 1982 was honored at a convocation ceremony held prior to commencement. Dr. Charles G. Rob, professor of surgery at the medical school, gave the keynote speech. Internationally known for the development of pioneer techniques in vascular surgery, Rob joined the ECU faculty in 1978 after retiring from the University of Rochester School of Medicine and Dentistry, where he was professor and chairman of the Surgery Department for 17 years.

Dr. James G. Jones, chairman of the Department of Family Medicine, has been elected vice president of the American Board of Family Practice.

The board is responsible for certifying physicians as specialists in family practice. There are 26,000 physicians in the specialty.

Jones has been a member of the group's board of directors since 1978. He is also chairman of the research and development committee, a member of the recertification and executive committees and a delegate to the American Board of Medical Specialties.

In addition, he is on the board of directors of the Family Practice Residency Assistance program and a member of the committee on aging of the American Academy of Family Practice. He is past president of the North Carolina Academy of Family Physicians.

Jones has also recently been named chairman of the family practice editorial board for *Ortho Forum*, a magazine for physicians. Jones is the first chairman of the newly established board which will advise the magazine's editors about the publication of articles most relevant to family practitioners. The magazine is published six times a year in Oradell, N.J., by Ortho Pharmaceutical Corp.

Jones was in private practice in Jacksonville, N.C., for 13 years before joining the medical school in 1975.

A simple piece of equipment on a secretary's desk at the medical school is helping family physicians in Ahoskie diagnose and treat complicated pregnancies.

A telecopier, a system that can send and receive printed messages, enables Ahoskie physicians to transmit over telephone lines test results that can be used by ECU obstetricians to evaluate possible risks to the fetus and mother.

The consultation takes only minutes and reduces

the risk of early damage to the fetus which may result in life-threatening abnormalities or death, according to Dr. Jarlath MacKenna, associate professor of obstetrics and gynecology.

The telecopier in MacKenna's first floor office at Pitt County Memorial Hospital is a companion to another piece of equipment in the labor and delivery area at Roanoke-Chown Hospital.

When physicians on the hospital's medical staff receive abnormal test results from a fetal heart monitor, they are able to transmit a print-out of the information to MacKenna, who is a specialist in high-risk pregnancies. The physicians can then discuss a course of treatment that will best assure the delivery of a healthy baby.

The Department of Family Medicine has received a \$108,000 grant from the Beverly Foundation to support a teaching program in geriatric medicine at Greenville Villa, a local nursing home.

The three-year grant will establish a training program for ECU medical, nursing and allied health students and enable the medical school to provide multidisciplinary services to the 150-bed facility.

The program will integrate full care for patients to help them achieve maximum function, according to Dr. Harold Kallman, chief of geriatric training in family medicine.

Kallman says the consultation team will include physician and nurse gerontologists and health professionals in nutrition, dentistry, physical therapy, pharmacology and psycho-social work.

In addition to evaluating patients at Greenville Villa, the consultation team will serve inpatients at Pitt County Memorial Hospital and outpatients in ambulatory clinics and home settings. Regular conferences to assess individual needs of patients will guide the team in its evaluation.

Kallman says the goal of the consultation service is to improve each patient's quality of life and teach the family to cope with the special needs of the geriatric patient. He says the provision of these services provides an excellent learning environment for students and residents.

Medical students currently receive training in geriatric medicine during a third-year rotation in family medicine. The expansion of the geriatric medicine program now makes it possible for students in ECU's allied health and nursing programs to acquire clinical experiences as members of a comprehensive geriatric care team.

Kallman says the recent establishment of a fellowship in geriatric medicine will also enhance the medical school's delivery of care and training. The one-year fellowship is open to physicians who have recently completed postgraduate training in geriatric medicine or board-certified physicians who have practiced family medicine for at least five years.

Kallman says physicians who complete the fellow-

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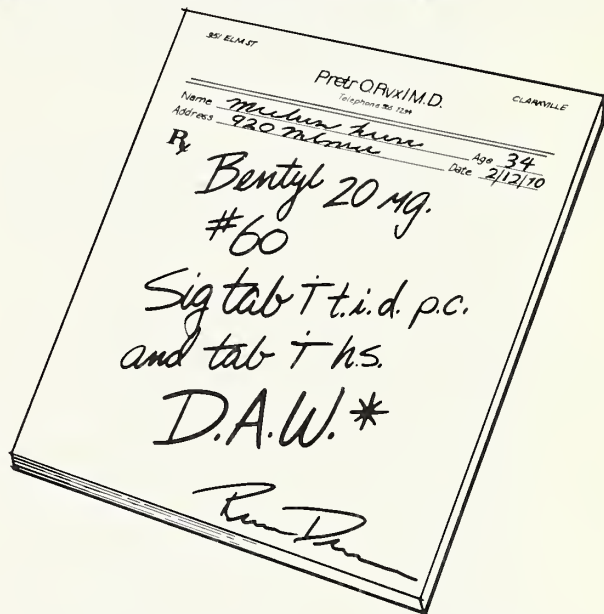


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- ⊗ Significant pharmacologic effect in the distal colon compared to placebo,¹ shows how Bentyl controls abnormal motor activity in the irritable colon patient.*

*This drug has been classified "probably" effective for this indication.

Merrell Dow

Reference:

1. Chowdhury AR and Lorber SH: Personal communication, 1980.

(See Product Information on the next page before prescribing Bentyl.)

Although the dose of Bentyl used to show pharmacologic effect was 50 mg, which is a higher single dose than that permitted in the labeling, the dose was considered justified, since the recommended daily dose of injectable Bentyl is 20 mg (2 ml) every 4 to 6 hours. Thus, in 8 hours, a patient could receive a total of 60 mg I.M. and, at that time, as a result of the sustained plasma levels from the 20 mg injections at 0 and 4 hours, might show an even higher plasma level than occurs after a single 50 mg dose. Presumably, the same pharmacologic effect would follow. These observations do not constitute evidence of efficacy.

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Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy), obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis), paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage, severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis.

WARNINGS: In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. There are rare reports of infants, 6 weeks of age and under, administered dicyclomine hydrochloride syrup, who have evidenced respiratory symptoms (breathing difficulty, shortness of breath, breathlessness, respiratory collapse, apnea), as well as seizures, syncope, asphyxia, pulse rate fluctuations, muscular hypotonia, and coma. The above symptoms have occurred within minutes of ingestion and lasted 20 to 30 minutes. The timing and nature of the reactions suggest that they were a consequence of local irritation and/or aspiration rather than a direct pharmacologic effect. No known deaths or permanent adverse effects have been reported. Bentyl syrup should be used with caution in this age group.

PRECAUTIONS: Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy.

Use with caution in patients with:

Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon.

Hypertension, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension.

Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur.

ADVERSE REACTIONS: Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia; increased ocular tension; loss of taste; headache, nervousness, drowsiness; weakness; dizziness; insomnia, nausea, vomiting; impotence; suppression of lactation; constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of light-headedness and occasionally local irritation.

DOSAGE AND ADMINISTRATION: Dosage must be adjusted to individual patient's needs.

Usual Dosage

Bentyl 10 mg capsule and syrup: *Adults:* 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (Dilute with equal volume of water.)

Bentyl 20 mg tablet: *Adults:* 1 tablet three or four times daily.

Bentyl Injection: *Adults:* 2 ml. (20 mg.) every four to six hours intramuscularly only.

NOT FOR INTRAVENOUS USE

MANAGEMENT OF OVERDOSE: The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine® (bethanecol chloride USP) should be used.

Product Information as of July, 1980

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ship will have increased expertise in caring for the elderly and be qualified to teach the specialty in emerging programs at medical schools and teaching hospitals.

Scientists at the School of Medicine report they have found evidence that nerves help control the activity of the ovary, an organ that was once thought to be controlled exclusively by hormones.

The research suggests that some drugs given to women to alter brain function may, because of their effect on nerves, also alter ovarian activity, according to Dr. Hubert W. Burden, professor of anatomy and principal investigator for the project.

The investigators presented the results of their research on ovarian control recently at the annual meeting of the Federation of American Societies for Experimental Biology in New Orleans. The research documents anatomical evidence to support the involvement of nerves in controlling ovaries.

In a project supported by a \$47,542 grant from the National Institutes of Health, Burden and his co-investigators discovered that in spinal nerves and the vagus nerve. His group concluded that the ovaries appear to be directly linked to the vagus nerve, physical evidence that the ovaries are in direct communication with the central nervous system.

Burden said scientists have known for years that pituitary hormones, called gonadotropins, regulate the activity of the ovaries. Until recently scientists believed that the ovaries were controlled exclusively by this complex hormonal system. The role of nerves in the control of ovaries was thought to be insignificant.

According to Burden, recent interest in the function of nerves can be partially attributed to technical advances which have allowed scientists to study nerves more closely.

To identify nerve involvement, the ECU researchers used a new tracer technique which involved injecting horseradish peroxidase into rat ovaries and following the path of this marker from the ovaries back into specific nerve cell ganglia.

Burden says they do not know yet the exact role played by the nerves, but preliminary results suggest that they participate in ovarian control but are not the primary controllers.

Also participating in the project were anatomy professor Irvin E. Lawrence, technicians, Marilyn Capps and Carlton P. Smith, and student Phyllis Harris.

The School of Medicine sponsored an international conference on "Mononuclear Phagocyte Biology: Population Diversity, Renewal and Regulation" May 17-19 in Wrightsville Beach.

The 28-member faculty, representing advanced sci-

entific institutions around the world, presented their research on mononuclear phagocytes and emphasized the developmental processes and regulatory mechanisms determining the functions of the cells.

Four medical school physicians received awards from the graduating class of students at the school's recent convocation ceremony.

Dr. Seymour Bakerman, professor and chairman of the Department of Pathology, received the Basic Science Faculty Award. Bakerman also was the award recipient last year.

Dr. William R. Walker, assistant professor of psychiatric medicine, also received the Clinical Science Faculty Award for the second consecutive year.

Dr. Michael D. Weaver, clinical assistant professor of radiology, was honored by the students with the Community Physician Award. Dr. Michael Messino, who is completing postgraduate training in medicine at ECU, received the Resident Award.

The Class of 1982 also recognized the Biochemistry and Pathology Departments for outstanding basic science courses and the Obstetrics and Gynecology Department for the outstanding clinical science course.

Dr. Samuel S. Spicer has been named assistant professor of emergency medicine. Spicer formerly was emergency room physician at Broward General Medical Center, Fort Lauderdale, Fla. He has also

been an emergency physician in Eustis, Va., and Gloucester, Va.

He received his undergraduate degree from Emory University and his medical degree from the Medical University of South Carolina. He completed residency training at the Bowman Gray School of Medicine and the Medical College of Virginia.

Dr. Stephen Porter, Department of Family Medicine, was a guest speaker recently at Louise Obici Hospital in Suffolk, Va. Porter's speech was entitled "Individualized Drug Therapy: Practical Application of Therapeutic Monitoring."

Dr. Richard H. Ray has been appointed assistant professor of physiology. Ray recently completed a postdoctoral research fellowship in the Department of Anatomy at the Brain Research Institute at the University of California, Los Angeles.

His primary area of research is the function of sensory and motor systems of vertebrates. His current research focuses on how the nervous system codes sensory information.

A native of Charlotte, Ray received his undergraduate degree from the University of North Carolina-Charlotte and his doctoral degree from the Medical College of Georgia.

Dr. Thomas R. Syre, departmental administrator of the Family Practice Center, published an article entitled "Meeting Community Needs: A View of a Volunteer Ambulance Service" in the April issue of *Eta Sigma Gamman*.

Dr. Joyce M. Mitchell has been named assistant professor of emergency medicine. In addition to teaching responsibilities, she will serve as an emergency room physician at Pitt County Memorial Hospital.

Mitchell formerly was assistant professor of emergency medicine at the George Washington University Hospital, Washington, D.C., where she also completed residency training.

She received her undergraduate degree from Muhlenberg College, Allentown, Pa., and her medical degree from Georgetown University in Washington.

Three faculty members from the Department of Physiology presented papers at the 66th Annual Meeting of the Federation of American Societies for Experimental Biology in New Orleans during April.

Drs. David L. Beckman, professor, S. Gregory Iams, associate professor, and John C. Yeager, assistant professor, presented a paper, "Brain Samples from Sudden Intracranial Decompression and Hemodynamic and Metabolic Factors During Sei-

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zures from Oxygen at High Pressure (OHP)."

Beckman also presented a paper he co-authored with Dr. Daniel J. Crittenden, research associate, and Dolphin H. Overton III, a second-year medical student. The paper is entitled "Sympathetic Factors and Glucagon in Seizures During Exposure to Oxygen at High Pressure (OHP)."

Several faculty members from the Department of Biochemistry also attended the federation meeting and presented five papers. Collaborating on two research studies presented were associate professors, George J. Kasperek, Hisham A. Barakat and G. Lynis Dohm with Edward B. Tapscott, research assistant, and Rebecca A. Snider, research technician. The studies are entitled "Progressive Changes in Fatty Acid Metabolism in Rat Muscle and Liver During Exercise" and "In Vitro Studies of Fatty Acid Oxidation by Liver and Muscle Preparations of Exhaustively Exercised Rats."

Dr. Sam N. Pennington, professor, presented "The Molecular Mechanism of Fetal Alcohol Syndrome (FAS) I. Ethanol-Induced Growth Suppression." Co-authors on Pennington's paper include Dr. Gerhard Kalmus, J. W. Boyd and R. W. Wilson from the Department of Biology at East Carolina University.

Dr. Phillip H. Pekala, assistant professor, also presented a paper during the meeting. His paper is entitled "On the Mechanism of Lipoprotein Lipase Suppression in 3T3-L1 cells by an Endotoxin Induced Mediator from Exudate Cells."

In addition, Dr. Richard H. L. Marks, associate professor, and Karen B. Molzen, research technician, presented their research on "Chemical Crosslinking of Azurin and Cytochrome c-551 from *Pseudomonas Aeruginosa*."

Dr. Janice Daugherty, instructor of family medicine, has published a paper in the May issue of the *Family Medicine Review* entitled "Newborn Care by Family Physicians: Increasing Public Awareness."

In addition, Daugherty and Dr. Julie A. Nickelsen, assistant professor of family medicine, attended the 15th Annual Spring Conference of the Society of Teachers of Family Medicine on May 5, in Chicago, where they presented "Residents' Self-Assessed Competence and Content Checklists as Curriculum Development Tools."

Dr. E. Jackson Allison Jr., associate professor and chairman of the Department of Emergency Medicine, represented the U.S. Agency for International Development in Tanzania, East Africa April 19-May 9. Allison, who spent three years in Africa with the Peace Corps, was selected by the agency to develop health education and media programs introducing ventilated improved pit latrines.

Dr. Walter J. Pories, professor and chairman of the

Department of Surgery, is the senior author of a paper entitled "The Effectiveness of Gastric Bypass Over Gastric Partition in Morbid Obesity: Consequence of Distal Gastric and Duodenal Exclusion."

The paper was presented to the American Surgical Association in Boston during April. Other authors include Department of Surgery faculty Dr. Edward G. Flickinger, associate professor, Dr. Francis T. Thomas, professor, and Diane Meelheim, RN, FNP.

Dr. Sudhakar Madakasira, assistant professor of psychiatric medicine, has published an article appearing in the April issue of the *Journal of Clinical Psychopharmacology*. The title of the article is "Single Dose Prediction of Steady State Plasma Levels of Amitriptyline."

An article appearing in the April issue of the *Journal of the American Medical Women's Association* was written by Dr. Andrea L. Brand, assistant professor of family medicine, and is entitled "On Stage, Actor or Physician?"

Dr. Richard S. Marx, assistant professor of medicine, presented a paper during the 82nd Annual Meeting of the American Society for Microbiology held in Atlanta in March.

The paper, entitled "Activation of Serum Leukotactic Factor by Mucorales Species," was co-authored by Marx, Keith Forsyth, research technician, and Suzanne K. Hentz, second-year medical student.

Dr. James L. Mathis, professor and chairman of the Department of Psychiatric Medicine, was a guest speaker at the N.C. Neuro-Psychiatric Association meeting held recently in Greenville, N.C. His topic was "Is Psychotherapy Necessarily Medical?"

"Quantitative Bactericidal Activity of Human Wet Cerumen" was a paper presented by Dr. Robert S. Fulghum, associate professor of microbiology, and Mary Stone, research fellow, at the meeting of the N.C. Chapter of the American Society for Microbiology.

Also during the April meeting Fulghum was elected alternate councilor to the national society, and he chaired the committee which drafted the society's new constitution.

Dr. Dennis Revicki, research coordinator in the Department of Family Medicine, traveled to Ohio State University in May where he presented "An In-

roduction to Factor Analysis'' to the North American Primary Care Research Group.

Dr. Joseph E. Williamson, assistant professor of emergency medicine, has been appointed associate chairman of the Department of Emergency Medicine and associate director of the Emergency Department at Pitt County Memorial Hospital.

**Duke University
Medical Center**

The Duke University Board of Trustees appointed Dr. Arthur C. Christakos as successor to Dr. Ewald W. Busse, dean of the school of medicine. The board named Christakos dean of undergraduate medical education, effective Sept. 1. Busse, a renowned psychiatrist, will return to teaching and research in psychiatry and aging.

"Dr. Christakos has always shown the utmost concern and diligence in working with medical students — whether in helping them with their personal problems or in preparing them for house staff appointments," said Dr. William G. Anlyan, vice-president for health affairs. "He is dedicated to quality medical education."

Christakos earned his undergraduate degree at Duke in 1951 and his medical degree at the Medical College of South Carolina in 1955. He served his internship and completed his residency in obstetrics and gynecology in 1962 at Medical Center Hospital in Charleston, S.C. As a Josiah Macy Fellow at Columbia University prior to joining the Duke faculty, Christakos studied human chromosomal disorders.

Much of his research and his clinical work has been directed toward prenatal diagnosis of chromosomal abnormalities in women whose babies are at high risk. He plans to continue an active role within the Department of Obstetrics and Gynecology after assuming his new duties.

Anlyan said Busse will remain on the Duke faculty as the J. P. Gibbons Professor of Psychiatry as well as Dean and Associate Provost Emeritus. Busse joined the faculty in 1953 as a professor and chairman of the Department of Psychiatry. He became associate provost and dean in 1974.

The Board of Trustees also appointed Dr. George L. Maddox chairman of the University Council on Aging and Human Development, effective Sept. 1. Maddox replaces Dr. Ewald W. Busse, who has served as the council chairman for 27 years.

The board also appointed Dr. Harvey Jay Cohen to succeed Maddox as director of the Center for the Study of Aging and Human Development. Maddox has been director of the Center since 1972.

"Dr. Maddox is recognized as one of the outstanding gerontologists in the world today," Busse said.

Maddox is a professor of sociology and medical sociology in the departments of sociology and psychiatry. In 1978-79 he was also a founding member of the Council of the National Institute on Aging.

My appointment as chairman of the council reaffirms the importance of programs in aging throughout the university," said Maddox. "I see the chairmanship as a major opportunity to develop resources for new processes of aging. The physician has been chief of the medical service at the Veterans Administration Medical Center since 1976, director of the Veterans Administration Geriatrics Fellowship Program since 1978, and director of geriatrics for the past year.

"I intend to build upon the broad base of knowledge in the social and psychosocial aspects of aging already established at the center," he said. "Knowledge of the aging process is crucial in a time when there is such a large shift in U.S. demographics toward an increasing number of older people."

Cohen is a professor in the Department of Medicine. Busse said Cohen "is a skilled clinician, scientist, educator and administrator and is widely recognized for his contributions to the field of aging."

A Duke University Medical Center molecular biologist was one of 16 researchers chosen in the U.S. as a Searle scholar.

Dr. Russel E. Kaufman, an assistant professor of hematology and medical oncology, said the \$150,000 award will support his research in the structure of human collagen genes.

"By learning how to characterize normal genes, we hope to learn how to identify defective genes that cause a large number of inheritable connective tissue disorders."

Kaufman said he thought diseases of the connective tissues are some of the most troublesome, painful disorders that afflict mankind.

The biologist said he will use samples from the dermatology patients of a Duke physician, Dr. Sheldon Pinnell, to clone the genes of collagen.

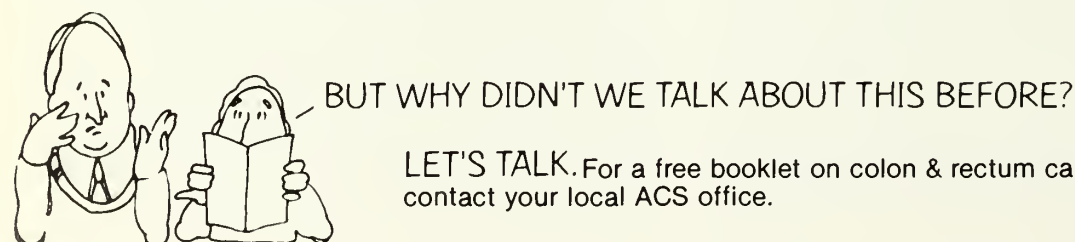
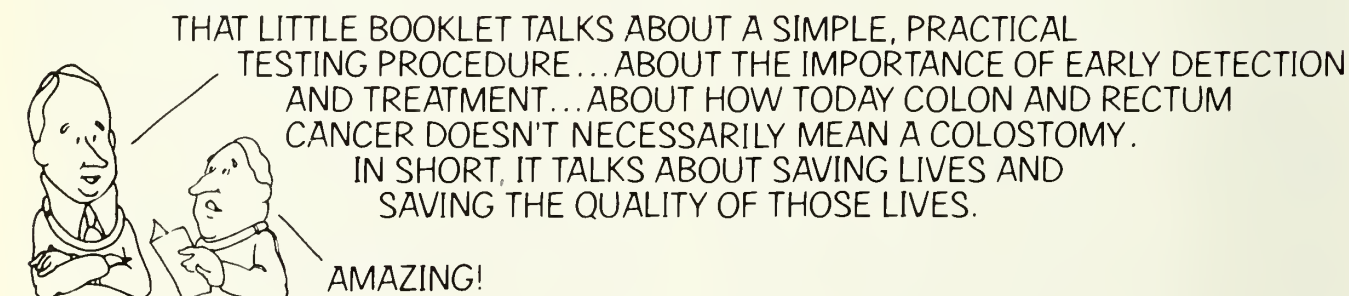
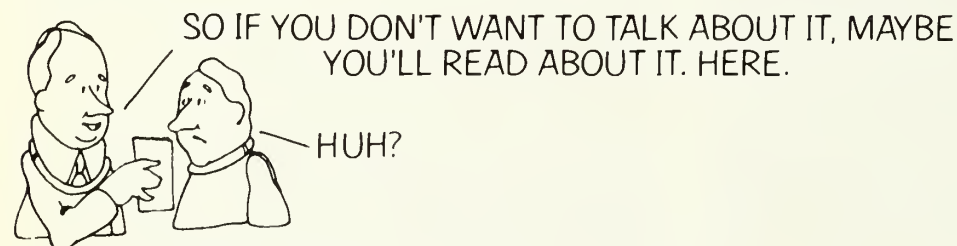
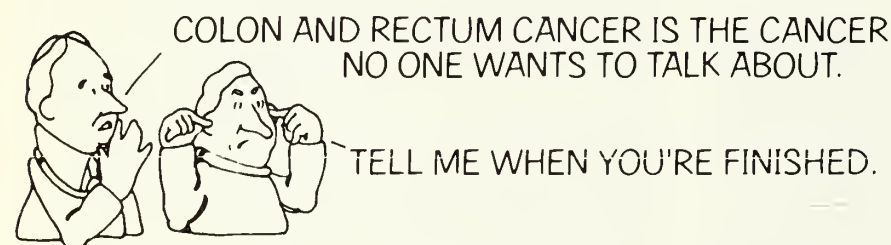
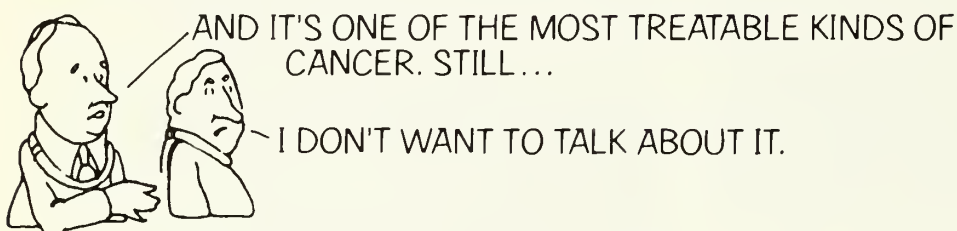
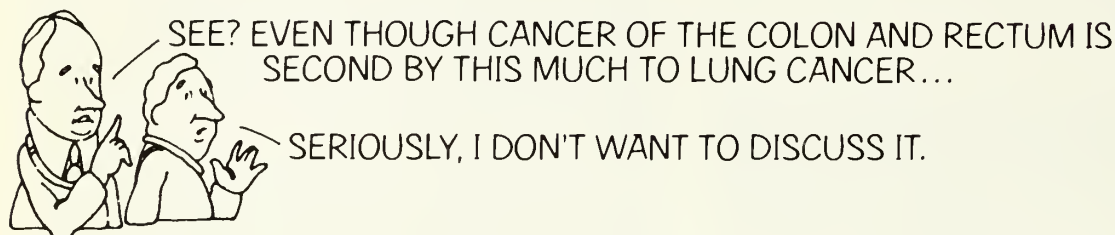
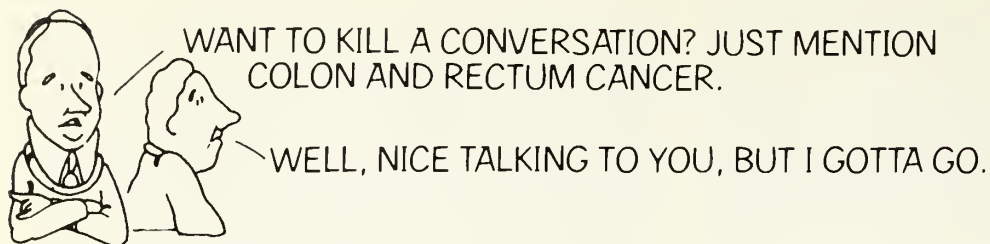
More than 175 members of the 65th General Hospital Unit gathered at Duke University Medical Center in April for the 40th reunion of the reactivation of the unit. The majority of the unit's members were recruited from the medical school's faculty in 1943 to care for soldiers in World War II.

Dr. Ivan Brown, who was one of the surgeons in the unit, has kept in touch with many of the servicemen. Brown, a former James B. Duke Professor of Surgery who now practices in Lakeland, Fla., said doctors, nurses and enlisted personnel who served in the 65th Unit traveled back to Duke from all across the Continental U.S., including one enlisted person who flew in from Hawaii. Brown is the unit's historian.

"It's difficult to explain why we feel so close — so bonded — to each other," Brown said. "Most of us were young, it was wartime and we spent about three and a half years together."

Brown said that when the unit was at its heaviest, it had 1,400 beds filled. The hospital unit also treated

(continued on page 615)



American Cancer Society 

NC – AMA

Delegates' Report

Introduction

- . The AMA House of Delegates met in Chicago June 13-17.
- . There were 305 delegates seated:
 - 236 delegates representing state medical associations
 - 61 delegates from National Specialty Societies
 - 8 Section and Service delegates.
- . Dr. William Johnson, president of the American Society of Cytology of the Duke University Medical Center, was seated with the North Carolina delegation at this meeting as an additional Specialty Society delegate.

The House, at the same time, declared a moratorium on additional applications for Specialty Society representatives pending a Board of Trustees report on the size and composition of the House of Delegates to be presented at the December 1982 meeting.

Development of a National Health Policy

- . The House approved a major commitment by the AMA to lead in the development of both basic principles and a health policy plan in order to establish national priorities for dealing with health issues. The plan would serve as a national outline for the purpose of evaluating future proposals for health care on a long term basis and would seek to avoid the past practices of dealing with health care issues as individual crises on an annual basis in a piecemeal manner.
- . A variety of professional, hospital, business, labor, consumer and insurance organizations will participate.
- . The purpose is to establish the private sector's national agenda for dealing with health issues, as a basis for public decisions to be made in the future.
- . The set of basic principles and the Health Policy Plan will be reviewed by AMA Councils, the Board, and the AMA House.

Federal Trade Commission

The House adopted two reports and three resolutions calling for continued strong support for federal legislation pertaining to FTC jurisdiction over the learned professions.

- . S. 2499 would:
 - Reauthorize the FTC
 - Amend the FTC act to specify that there is not FTC jurisdiction over the professions
 - Prohibit FTC pre-emption of state law
 - Make procedural reforms in FTC proceedings.

. S. 1984

--- Provides clearly that the FTC does not have jurisdiction over the professions and cannot pre-empt state laws relating to the professions.

--- These provisions have been offered as an amendment to S. 2499.

. H.R. 3722 (Luken-Lee Bill)

--- Would place a moratorium on FTC activities regarding state-regulated professions and professional associations.

Hospital Medical Staff Membership in the AMA

. The Board recommended a Section on Medical Staffs in the House.

. The report concluded organized hospital medical staffs need to be represented more directly in the AMA House of Delegates.

. The House authorized a Study Committee to make recommendations on implementation mechanisms for submission at the Interim Meeting.

AMA Dues - 1983

. The House approved a Board of Trustees proposal to implement the planned incremental increase in regular dues by \$30 in 1983.

. Other dues categories will be increased proportionately except for medical student dues, which remain at the same level.

In recommending the dues increase, the Reference Committee:

. Noted the economic condition of the country but said that the work of the Association is important and can only continue successfully from a firm financial position.

. Reported there was no decrease in membership last year when the dues were raised in the first of the planned increments.

Participation of Young Physicians in Organized Medicine: Progress Report

The House received a progress report on young physicians' participation in organized medicine.

The report also recommended modification of some membership procedures that exist in the federation. They include:

Recommendation 1 - That the AMA strongly urge all county and state societies to review their bylaws and membership procedures and remove all unnecessary barriers to membership as soon as possible.

Recommendation 2 - That the AMA endorse and encourage the universal utilization of the Uniform Application and Billing Forms recently developed by AAMSE.

Recommendation 3 - That the AMA encourage all county and state societies to implement a simple "transfer of memberships" procedure that will facilitate uninterrupted memberships in organized medicine for physicians who relocate at any time during their careers.

Recommendations for "Future Directions for Medical Education"

. This comprehensive report contained 36 recommendations and is the result of a two-year effort involving six task forces.

. One major proposal approved by the House called for a revival of the general internship as the transitional year between medical school and residency.

. Other topics covered were:

--- Generalism and specialism

--- Preparation for an admission to medical school

--- Continuing medical education

--- Licensure for the practice of medicine.

Continuation of Federal Financial Aid Programs for Medical Students

In a two-part substitute resolution the House voted:

That the AMA continue to urge the President and the Congress to maintain the eligibility of medical students to participate in the Guaranteed Student Loan Program.

That the AMA continue to urge the President and the Congress to fund direct student loan programs available to medical students in amounts which are equal to or greater than those of Fiscal Year 1982 for all such programs.

Corporation or Employer-Sponsored Examinations

The House approved a policy stating that:

- . The AMA encourage employers who provide or arrange for special or comprehensive medical examinations of employees to be responsible for assuring that these examinations are done by physicians competent to perform the type of examination required.
- . Whenever practical, the employee should be referred to his or her personal physician for such professional services.
- . In many instances in which an employee does not have a personal physician, efforts should be made to assist him or her in obtaining one, with emphasis on continuity of care.
- . This effort should be aided by the local medical society whenever possible.

Proposed Pension Reforms

The House voted:

That the AMA continue to support equity in pension plans, including appropriate increases in the maximum contribution to self-employed retirement plans (Keogh), and actively oppose enactment of H.R. 6410, the Pension Equity Tax Act of 1982, in its form as introduced because of its major discriminatory provisions. H.R. 6410 proposes a drastic reduction in retirement benefits available in professional corporations as compared to other corporations.

Civilian-Military Contingency Hospital System

The House supported the Civilian-Military Contingency Hospital System which will enable the United States to prepare for the treatment of casualties from any future conventional military conflict, in civilian hospitals if necessary.

Medical Consequences of Nuclear War

The House approved a report detailing several AMA activities pertaining to the medical consequences of nuclear war.

In addition, the House called for a study of the medical effectiveness of relocation and shelter plans proposed by the Federal Emergency Management Agency.

Designation of Areas of Medical Need

The AMA should:

- . Ask that the federal government consolidate the designation process for identifying areas of medical need, in connection with federal programs which bring physicians into these areas.
- . Coordinate designation processes with state agencies to obviate duplicative activities.
- . Ask for state and local medical society approval of designated underserved areas.
- . Continue the rules requiring automatic cessation of federal subsidies when manpower guidelines are met.

Insurance Assignments

The AMA should investigate the frequency of and seek a solution to the problem of erroneous payments to insurance beneficiaries instead of physicians to whom they have assigned such payments.

State Regulation of Professional Liability Insurance

The House supported the current system of state regulation of professional liability insurance and opposed any effort by the federal government to preempt this right of the states.

Tobacco and Health

- . The House reaffirmed its support for the concept of rotational warnings on cigarette packages.
- . The House supported the concept of a federal Office on Smoking and Health.

Prevention of Fires Related to Cigarette Smoking

The House voted:

- . To support the concept of self-extinguishing cigarettes.
- . To continue support for "The Cigarette Safety Act" calling for a study to determine the feasibility and the practicability of establishing a standard for self-extinguishing cigarettes and requiring cigarette manufacturers to meet that standard.
- . To inform major cigarette manufacturers of its support of the concept of self-extinguishing cigarettes for the purpose of reducing fire related deaths, injuries, and loss of property.
- . To reiterate opposition to all smoking.

Third Party Coverage for Psychiatric Services

- . The House was informed of the continuing disparity of third party coverage for psychiatric services.
- . The House reaffirmed AME support for parity in payment of benefits for psychiatric services as compared to other medical services.

Prevention of Deaths and Injuries from Automobile Accidents

The House supported state legislation

- . Mandating the use of seat belts
- . Requiring passive restraint of infants and children in motor vehicles.

Scientific Reports

The House considered several more in the series of reports from the AMA Council on Scientific Affairs. Topics included:

- . Medical Evaluations of Healthy Persons
- . Sodium in Processed Foods
- . Continuous Ambulatory Peritoneal Dialysis
- . Infant Formula Marketing
- . Fetal Effects of Maternal Alcohol Use
- . Brain Injury in Boxing.

These reports constitute authoritative documents on the subjects covered as resources for all physicians. The Board of Trustees has under consideration plans for making these and previous reports of the Council on Scientific Affairs more widely available to the medical profession.

Your AMA delegates solicit your comments and opinions on these actions and on future concerns and issues in medical care. Many, many AMA policies began with an individual physician who had a good idea and coaxed it through the democratic process.

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The Physician's Sleep Glossary

Some common sleep laboratory terms

poly-som-no-graph. An instrument which simultaneously records by electrodes physiological variables during sleep—for example, brain activity (EEG), eye movements (EOG), muscle tonus (EMG) and other electrophysiological variables. These readings indicate precisely when patients fall asleep, how many wake periods they experience, the quality of sleep and the duration of sleep.

sleep la-ten-cy. The period of time measured from "lights out," or bedtime, to the commencement or onset of sleep.

wake time af-ter sleep on-set. Intervals of time spent awake between onset of sleep and the end of the sleep period. The polysomnograph registers the length and frequency of the intervals.

to-tal sleep time. The amount of time actually spent in sleeping. This is estimated by subtracting wake times from the period encompassed by the onset and the termination of sleep.¹

REM/NREM. 1. REM, or rapid eye movement, sleep is "active"—characterized by increased metabolic rates, elevated temperature and arousal-type EEG patterns. 2. NREM, or non-rapid eye movement, sleep represents "quiet" sleep stages. There are four distinct stages of NREM sleep.²

re-bound in-som-nia. A statistically significant worsening of sleep compared to baseline on the nights immediately following discontinuation of sleep medication.³

Efficacy objectively demonstrated in the sleep laboratory—the most valid environment for measuring hypnotic efficacy.

In numerous sleep laboratory investigations patients fell asleep sooner, slept longer and woke up less during the night³⁻¹² with

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Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; in acute or chronic medical situations requiring restful sleep. Objective sleep laboratory data have shown effectiveness for at least 28 consecutive nights of administration. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended. Repeated therapy should only be undertaken with appropriate patient evaluation.

Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, light-headedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg recommended initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.



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(continued from page 608)

thousands more enlisted personnel in its outpatient clinics, he said.

Dr. Ralph Snyderman, chief of Duke University Medical Center's division of rheumatology, lectured on arthritis to a crowd of 250 people attending the May 4 "Health Night Out" talk. The lectures are a series of free monthly programs sponsored by the medical center's public relations office.

"It is estimated that in North Carolina alone 300,000 to 500,000 people suffer from some form of arthritis," Snyderman said. He explained the different types of arthritis and how they can be diagnosed.

The rheumatologist discussed the many remedies ("Some are real, some are spurious," he said), and suggested that arthritis victims should "try not to use a joint that hurts because the pain is trying to tell you something."

As Snyderman pointed out, Duke is a center of arthritis research and treatment for adults and children.

More than 300 health professionals graduated from Duke in commencement exercises last spring on the university's East Campus lawn. The commencement speaker this year was Dr. Hannah Gray, president of the University of Chicago and a noted historian of the Renaissance.

Medical degrees were given to 111 students; 87 nursing degrees were awarded; 37 physician's assistants received degrees; 33 masters of health administration degrees were conferred; and 23 students received physical therapy degrees. Degrees were also granted to 10 medical technologists, and five pathologists' assistants received bachelor of health science degrees. The Nurse Anesthesia Program at Duke also graduated 10 students.

Two faculty members in the medical center recently were appointed to new positions.

Dr. Hugh Sampson, assistant professor of pediatrics, was appointed associate director of the clinical research unit (CRU). He succeeds Dr. Francis Neelon, associate professor of medicine, who was appointed chief of the division of endocrinology.

Neelon was appointed acting director of the endocrinology division in 1981 and, until Sampson's appointment, also served as associate director of the CRU. He was appointed to that position in 1975.

After earning his medical degree at Harvard in 1962, Neelon came to Duke for a medical internship. Neelon became an associate professor of medicine in 1977.

Sampson earned his medical degree at State University of New York at Buffalo in 1975 and served a pediatric residency at Children's Memorial Hospital in Chicago.

He came to Duke for a fellowship in the division of

allergy, immunology and pulmonary diseases in 1978, and was appointed assistant professor of pediatrics in 1980. Sampson conducts research studies in the CRU and continues to serve as director of the Cabarrus County Pediatric Consulting Program.

A professor of psychiatry at the medical center, Dr. Jeffrey L. Houpt, has been acting chairman of that department succeeding Dr. H. Keith H. Brodie, who was named chancellor of the University. Houpt assumed his duties June 1.

Houpt, who is head of the division of psychosomatic medicine and medical director of the clinical specialty unit, came to Duke as an assistant professor of psychiatry in 1975.

"He brings excellent administrative skills, clinical competence and teaching ability to the office of chairman," said Brodie, a James B. Duke Professor of Psychiatry, who has been chairman of the department since 1974.

Houpt is chief of the consultation and liaison service in the Department of Psychiatry. He received his medical degree from the Baylor College of Medicine in Houston in 1967 and served his psychiatry residency at the Yale University School of Medicine.

"My major challenge as acting chairman will be to maintain the momentum that we've achieved in the past five years," Houpt said. "During that time we've increased research funding by about two-fold, and we now have more than 900 applicants for 12 available residency positions."

Houpt said he thought the dramatic increase in funding for the psychiatry department and the increase in number of residency applications were "indications that Duke's Department of Psychiatry is truly a leading department on the national scene."

"We've also developed several innovative treatment programs, such as the clinical specialty unit and the behavioral physiology laboratory," he said.

Before coming to Duke, Houpt was director of the consultation-liaison service at Presbyterian Hospital in San Francisco. He also was medical director of the Brookwood Hospital of Pacific Medical Center in Santa Rosa.

James B. Duke Professor of Medicine Emeritus, Dr. J. Lamar Callaway, received the Stephen Rothman Award at the Society for Investigative Dermatology's 43rd annual meeting in Washington, D.C. in May.

The Stephen Rothman Award is the highest award presented by the American Society for Investigative Dermatology and is awarded to individuals who have made outstanding and unique contributions to academia and investigative dermatology.

Callaway is the 16th recipient of the award, which includes an honorarium and a gold medal. He received his medical degree from Duke in 1932. He also earned his BS in medicine from Duke and the University of Alabama in 1935. He joined the Duke staff in 1937.

The dermatologist has worked on the editorial

boards of several medical journals and published 128 articles, is co-author of two textbooks and has written two educational films on fungus disease. He served as vice-chairman of the academic council for three terms. He celebrated his 50th year at Duke in 1981.

A Duke University Medical Center physician, Dr. Robert J. Lefkowitz, was named a James B. Duke Professor in May.

Lefkowitz is the author of more than 200 scientific papers and serves on the board of professional journals in the fields of molecular and cardiovascular pharmacology, biochemistry and biophysics. He is a member of the national council of the American Federation for Clinical Research. He holds B.A. and M.D. degrees from Columbia University and first came to Duke in 1973.

Second year medical student Paul Spurduto won the Jones and Guerro Foundation Prize for the best research project on myelodysplasia. The prize, which carries a \$150 award, was established to encourage research, teaching and patient care in myelodysplasia and other chronically handicapping musculoskeletal conditions in children.

Dr. Joseph A. C. Wadsworth, professor of ophthalmology, served as red badge examiner at the American Board of Ophthalmology in Philadelphia in late April. At the American Ophthalmological Society in Hot Springs, Va. in May, he was chairman of the committee on medals and prizes and presented the Howe Medal.

William L. Hylander, professor in the Department of Anatomy, received a \$67,392 research grant from the National Institute of Dental Research to study strain in facial bones.

Fearghus T. O'Foghlu, professor of radiology, received a \$26,501 research grant from the National Cancer Institute to study "Wide-range Dosimeters Using Low-Z Scintillators."

Thomas C. Vanaman, professor of microbiology, received a \$92,202 research grant from the National Institute of Neurological and Communicative Disorders and Stroke to study brain specific proteins in nerve function.

Sheldon R. Pinnell, professor of dermatology, received an \$88,273 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. He is studying "Collagen Biosynthesis in Human Skin Fibroblasts."

Leon Lack, professor of pharmacology, received an \$85,006 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study the pharmacology of intestinal bile salt transport.

William Gough III, an immunology fellow, received

a \$20,040 national research service award from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases.

Lyn A. Thet, associate professor in the Department of Medicine, received \$103,400 from the American Heart Association for the project, "Pulmonary Endothelial Cell Kinetics During In Vivo Hyperoxia."

Darrell V. Lewis, assistant professor of pediatrics, received a \$29,092 new investigator research award from the National Institute of Neurological and Communicative Disorders and Stroke. Lewis is studying the neurotransmitter modulation of intracellular calcium.

James L. Parmentier, assistant medical research professor in the Department of Anesthesiology, received a research grant for \$69,666 from the National Institute of General Medical Sciences. His study is "Mode of Action of Volatile Anesthetics."

Barbara J. Crain, fellow in the Departments of Pathology and Pharmacology, received a \$50,500 award from the Pharmaceutical Manufacturers Association Foundation, Inc. Crain is studying the role of enkephalins in the hippocampus of kindled rats.

Michael S. Hershfield, associate professor of medicine and assistant professor of biochemistry, received a research career development award for \$38,324 from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. He is studying a lymphoblast model for disease of purine metabolism.

Per-Otto F. Hagen, associate medical research

professor in the Department of Surgery, received a \$15,268 research grant from the National Heart, Lung and Blood Institute to study the surgical and metabolic aspects of venous grafts.

Wendall F. Rosse, professor of microbiology and immunology and chief of the division of hematology and medical oncology, received a research grant of \$92,030 from the National Cancer Institute. He is studying immunological lysis in neoplastic disease.

Dolph O. Adams, professor of pathology, received a \$64,835 grant from the National Cancer Institute. His pathologic study is "Tumoricidal Effects of Macrophages."

Kenneth M. Flowe in the Department of Medicine received \$1,500 from the Cystic Fibrosis Foundation to fund his project, "Characterization of Meconium Mucins from CF and Normals."

Hie P. Bell, assistant medical research professor in anatomy and physiology, received a \$68,116 research grant from the National Institute of General Medical Sciences to fund a study, "Regulation of Membrane Phospholipid Synthesis."

Everett H. Ellinwood Jr., professor of psychiatry and pharmacology, received a \$187,359 research grant from the National Institute on Drug Abuse for his study, "Sensitivity to Driving Impairment with Drugs of Abuse."

Erdman B. Palmore, professor in the departments of psychiatry and sociology, received a \$70,290 research grant from the National Institute of Aging to

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study the determinants and consequences of retirement.

Martin J. Costello III, assistant professor of anatomy, received a \$41,525 research grant from the National Institute of General Medical Sciences to study "Combined X-ray/EM Analysis of Intramembrane Particles."

The Bowman Gray School of Medicine Wake Forest University

A project intended to raise funds for low-interest loans for medical students at the Bowman Gray School of Medicine has produced \$70,000.

The project was sponsored by the Medical Center Guild of the medical school and North Carolina Baptist Hospital, and was conducted in cooperation with the Carolinas Chapter of the American Society of Interior Design (ASID).

A 20-room house was made available for the project by Dr. Lawrence C. McHenry, professor of neurology at Bowman Gray, and his family. Twenty-four members of ASID from North and South Carolina individually decorated each room of the house in the personal style of the designer.

The house was opened with a preview party for patrons. Proceeds from that event totaled \$15,000. During the following three weeks, the house was open

to the public. An additional \$20,000 was raised through admission charges, lunches, plant sales, etc.

Proceeds from the project were matched by \$35,000 which came to the medical school from an anonymous source.

The showhouse project was initiated because of an anticipated drastic reduction in federal support for student loans. Both the Guaranteed Student Loan program and the Health Professions Student Loan program are in jeopardy.

Tuition at Bowman Gray, \$7,150 for the 1982-83 school year, remains the lowest among private medical schools in the United States. It has been kept low in order to encourage ethnic and economic diversity in the student body. Nevertheless, 85% of Bowman Gray students require some form of financial aid.

North Carolina Baptist Hospital, Bowman Gray's principal teaching hospital, has been awarded a \$100,000 grant from the Fannie E. Rippel Foundation of Morristown, N.J.

The grant will support the purchase of ultrasound equipment and the development of a clinical program to analyze human arteries and veins for problems that could lead to strokes and heart attacks.

The bulk of the grant, \$90,000, will be used to purchase a Mobile Artery and Vein Imaging System (MAVIS), a pulsed Doppler ultrasound system that permits the noninvasive study of blood vessels.

A prototype of MAVIS has been in use at the Bow-

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man Gray/Baptist Hospital Medical Center since 1978, when Bowman Gray was selected to conduct the first laboratory and clinical evaluations of the new equipment in this country. Scientists and physicians at the medical school worked closely with the manufacturer, General Electric Company of England, to perfect the technical capabilities of MAVIS.

The new MAVIS system includes improvements that were developed as a result of the work at Bowman Gray.

A program of daily clinical trials will be conducted to validate the effectiveness of the system. Bowman Gray studies already have shown MAVIS to be valuable in the study of carotid arteries. And pilot studies have shown that MAVIS can produce effective images of the subclavian and vertebral arteries.

Clinical trials will involve 100 patients each year for a three-year period. Evaluations will be designed for correlation of MAVIS results with patient symptoms and with other diagnostic procedures, such as digital radiography.

Four members of the Bowman Gray faculty have been promoted to the rank of full professor.

They are Dr. Carol C. Cunningham, biochemistry; Dr. Lloyd H. Harrison, surgery (urology); Dr. Lawrence L. Rudel, comparative medicine; and Dr. Robert B. Taylor, family medicine.

They were among 23 members of the school's full-time faculty for whom promotions have been announced, effective July 1.

Owen K. Davis, a graduating medical student at Bowman Gray, and Dr. Vardaman M. Buckalew Jr., professor of medicine (nephrology) and physiology were the recipients of top awards during Bowman Gray's annual awards ceremony.

Davis, of Glen Ridge, N.J., was presented the Faculty Award, the highest award bestowed on a medical student by the Bowman Gray faculty. The award is presented annually to a graduating medical student who has demonstrated outstanding scholarship and character during four years of medical school.

He also received the Obstetrics-Gynecology Merit Award, recognizing outstanding academic and professional stature in obstetrics and gynecology.

Buckalew received the Award for Teaching Excellence, the highest teaching award given to a member of the faculty. Winners of the award are selected by a committee composed of representatives of the medical school administration, faculty and student body. Candidates are nominated by the students.

Drs. Buckalew and Davis were among 21 recipients of special recognition at the awards ceremony. Davis was among 102 students who received the M.D. degree May 17 during graduation ceremonies on the Wake Forest University campus.

According to a survey conducted by a Bowman Gray otolaryngologist, the use of the Foley catheter

for removing foreign objects which are stuck in the airway may not be the best method.

Dr. Fred McGuirt, associate professor of otolaryngology, reported the results of his survey at the annual meeting of the American Broncho-Esophagological Association.

Responses to the survey of physicians showed that the Foley catheter is particularly popular with specialists "who have not had specific training in the care and complications of patients with foreign bodies in the upper aerodigestive tract," McGuirt said.

Advocates of using the Foley catheter for removing foreign objects point out that it is economical, the patient does not have to be hospitalized and there are no operating room expenses.

However, doctors trained in endoscopy contend that the possibility of airway obstruction exists with the Foley catheter, which could be life-threatening. Another disadvantage of using the catheter is that underlying or associated disease may be missed.

McGuirt outlined a series of safeguards which would limit patient risk associated with the Foley catheter, including having fluoroscopy and resuscitation equipment available.

Wake Forest University has graduated its first black female recipient of the Ph.D. degree. Blonnie F. Thompson of Durham received the Ph.D. degree in microbiology and immunology from Wake Forest during the university's May 17 commencement. She studied for the degree at the university's Bowman Gray School of Medicine.

Mrs. Thompson also is Wake Forest's first black recipient of a Ph.D. degree in the biomedical sciences. She holds the M.S. degree in biology from Atlanta University and the B.S. degree in biology from Winston-Salem State University.

Dr. William H. Boyce, professor of urology, has been elected vice president of the American Association of Genito-Urinary Surgeons.

Dr. Vardaman M. Buckalew Jr., professor of medicine (nephrology) and physiology, has been appointed to the Editorial Board of the *Annals of Internal Medicine* for a three-year term. He also has been appointed to the board of directors of the American Heart Association, North Carolina Chapter, for a three-year term.

Dr. Robert I. Kohut, professor of surgery (otolaryngology), has been elected to the At-Large Executive Committee for the National Committee for Research in Neurological and Communicative Disorders. He also was appointed to the Editorial Board of the *American Journal of Otolaryngology*.

Dr. George Podgorny, clinical associate professor of surgery (emergency medicine), has been elected to the nominating committee of the American Board of Medical Specialties.

Dr. Robert W. Prichard, professor and chairman of the Department of Pathology, has been appointed by the National Board of Medical Examiners as chairman of the Board's Part I Pathology Test Committee. He will serve as a member of the organization's governing board. He also has been selected to a three-year term as secretary-treasurer of the Association of Pathology Chairmen.

Dr. Richard C. Proctor, professor and chairman of the Department of Psychiatry and Behavioral Medicine, has been selected as a reviewer for the *Journal of the American Medical Association* (JAMA) and also

as a reviewer for the journal *Hospital and Community Psychiatry*.

Dr. George D. Rovere, associate professor of orthopedic surgery, has been appointed to the Medical Staff (Orthopedics) of the United States of America Amateur Boxing Foundation.

Dr. Earl Schwartz, assistant professor of surgery (emergency medicine) has been appointed to the 1982 national faculty for the American Heart Association Training Network for Advanced Cardiac Life Support and Basic Life Support.

Dr. Nat E. Smith, professor of medicine and associate dean, was re-elected to the board of directors of the Health Sciences Consortium at its annual meeting.

Though the history of the operation of medical causes is obscure, from their variety and their conflicting nature, yet by a proper examination of them, great triumphs have been achieved over the most dreadful maladies; and it is by observation, accurately appreciating the circumstances, on which the efficiency of remedies is decided, that the benefits of our science are most conspicuous. Thus, for instance, with regard to the treatment by venesection of inflammatory diseases, the most common of all morbid affections: However hidden may be the seat of the inflammation — in the eye, the head, the lungs, if its symptoms be present, this plan of treatment effectually removes it, and prevents, when judiciously administered, the formation of abscesses, which almost always end in the destruction of the organ, and if the organ be necessary to life, in the death of the individual. —*Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

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Dean's Page

MEDICAL EDUCATION: A TIME OF TRIAL

Richard Janeway, M.D.

The apparent resource constraints of the future will create a time of trial for the concept that the training of competent physicians and the creation of new knowledge are co-equal university missions, neither of which can be fulfilled in the absence of broad-based university involvement in patient care and research. Three forces may have profound effects on the character of medical education and on the structure of medical schools: fiscal constraint, an aging population and competition.

MONEY AND AGING

For the near term (and probably for the foreseeable future) it will be federal policy to attempt to restrain expenditures for health care services, for biomedical research and research training, and for support of students and medical education. The gravity of this situation is compounded by the "graying" of the nation. It is a demographic near-certainty that the proportion of the population over age 65 will double during the next 20 years. Our senior citizens are large users of federally-funded health care services, the legislative and political guarantees for which approximate an unrestrainable entitlement. Forty-two-and-a-half-billion dollars were expended by the Medicare program in fiscal year 1981. Seventy-five billions are projected for 1985. Utilization of these services by an enlarged population will increase the pressure to restrain controllable federal expenditures. "Controllables" comprise less than 25 percent of the federal

budget, but it is this portion from which medical schools traditionally have derived a large segment of their revenues in support of research and demonstration programs. In parallel with these two developments are emerging beliefs that competition among alternative systems of health care delivery will drive down costs and increase access to services.

EFFECTS OF COMPETITION

Increased competition through IPAs, HMOs, government-funded programs and consumer choice health protection programs, may result in the conclusion that many tertiary care services are not competitively distributable because of considerations of inherent cost, size, and quality. Major teaching centers may become monopoly providers of tertiary care since concentration of these services will be demonstrably more cost-effective than will be wider distribution. Furthermore, "alternate" systems will not provide high-technology, high-cost services because they would cause loss of appeal in a price-competitive market.

Increased concentration of tertiary services will limit the capacity of the academic medical center to provide comprehensive clinical education for medical students. Indeed, this outcome would eventually restrict academic medical center graduate training to all but the most tertiary specialists. In that event, medical student education and general graduate training related to the bulk of medical and surgical disorders may have to be taught primarily in community hospitals. Since community hospitals are unlikely to accept the burden of educational costs in a competitive world, some mechanism of support other than the "sick fund" will have to be found. The prospects of generating funds for such a program are chilling regardless of whether funding would be sought from students or the public or private sector. Indeed, given this scenario, the question may be raised, "Is the last two years of medical student training truly a university function?"

Total separation of clinical training from the university would be a retrogressive step with potentially disastrous implications. However, to the extent that broad clinical experiences continue to remain within the general purview of the university, the distribution of education and training is not a disturbing development. Clinical training is not now restricted and should not be restricted to the classical academic setting. Because the current medical education process has been so successful, we have a huge resource of science-based clinicians practicing in our communi-



Dr. Janeway is Dean of the Bowman Gray School of Medicine, Winston-Salem, NC.

ties. They should be involved in the training of students and residents. The opportunity for dramatically increased involvement in training with its attendant intellectual stimulation, however, will make private practice more attractive to the prospective clinician-teacher who otherwise would have stayed in the academic medical center. This movement into the community will increase the competitive pressures on medical schools as we try to recruit faculty.

THE PRESERVATION OF SCHOLARSHIP

The schools will be forced to offer more attractive economic packages while at the same time guarding against the potentially adverse impact on scholarly productivity imposed by increasing reliance on income from patient services to support overall institutional programs. To achieve proper balance between entrepreneurialism and scholarship will perhaps be our most significant challenge. Implicit to the achievement of this balance from the standpoint of the university is the need to select clinically oriented full-time faculty members who are committed to be full partners in the academic setting. It is essential that these members of the faculty love and accept, and are loved and accepted by their research-oriented colleagues to whom a more distant portion of the future is entrusted.

Even as this scenario unfolds in the clinical arena, the decrement in the number of M.D.s being trained for

academic and research careers and the constant-dollar decrease in NIH research funding presage that governmental and industrial research funds will become channeled into a relatively few institutions. In an increasingly competitive world only the institutions that have the financial ability, the tradition and the intellectual courage to invest in the future through the provision of plant capacity and program support will be able to conduct research. The compression of research funding to a limited number of institutions and the attendant demise of scholarly endeavor in the remainder has the unwanted potential of producing two classes of physicians: science-based or tradesman. We as a profession cannot allow this to happen to our society or to our profession.

Regardless of the difficulties we may face in forming coalitions, it is important that our entire profession support the totality of the concept that training of science-based clinicians and the discovery of new knowledge are co-equal university missions. If we are to continue to train science-based physicians conversant with the real and potential significance of the "new biology" to clinical medicine, we must do so in an atmosphere that reveres scholarship. It is important that we as a profession raise our voices to assure that both the immediate and the long-term public interest receive balanced recognition in a time of constrained resources.

In Memoriam

EDWIN P. ALYEA, M.D.

Edwin P. Alyea, M.D., Professor Emeritus of Urology, died in his home on 1 February 1982 of a myocardial infarction. Dr. Alyea graduated from Princeton University in 1919 and from Johns-Hopkins School of Medicine in 1923. He was trained in urology at Johns-Hopkins Medical Center by Dr. Hugh Hampton Young until accepting an appointment as the first Chief of Urologic Surgery at the Duke Medical Center in 1929. He was named Professor of Urologic Surgery in 1942 and, upon his retirement in 1969, was named Professor Emeritus. As the first chief of the Division of Urologic Surgery, he brought immediate national and international distinction to the Duke Medical Center. While chief of the Urologic Surgical Division, 35 residents completed their urology training. Many of these have gone on to achieve distinction in academic institutions throughout the country. One of the early innovators in the area of prostatic surgery, he helped develop transurethral resection and bring it to promi-

nence in this country. He was one of the early investigators of sulfanilamide therapy and its use in the treatment of urinary tract infections. He was a member of more than 20 professional associations and societies, and he also authored more than 30 publications.

Dr. Alyea was both founder and friend to Duke urology. Caring and careful, he asked that his residents treat each patient with thoughtfulness, respect, and dignity. To honor his academic accomplishments and efforts, his residents established the Edwin P. Alyea Visiting Professorship in Urology in 1964. Ten years later, in 1974, Duke's Urologic Clinic was renamed the Edwin P. Alyea Urologic Clinic.

Dr. Edwin P. Alyea is survived by his wife, Nancy Anderson Alyea; a son, Edwin P. Alyea, Jr., of Georgetown, Kentucky; a daughter, Nancy Alyea Schiebel of Durham, North Carolina, and three grandchildren.

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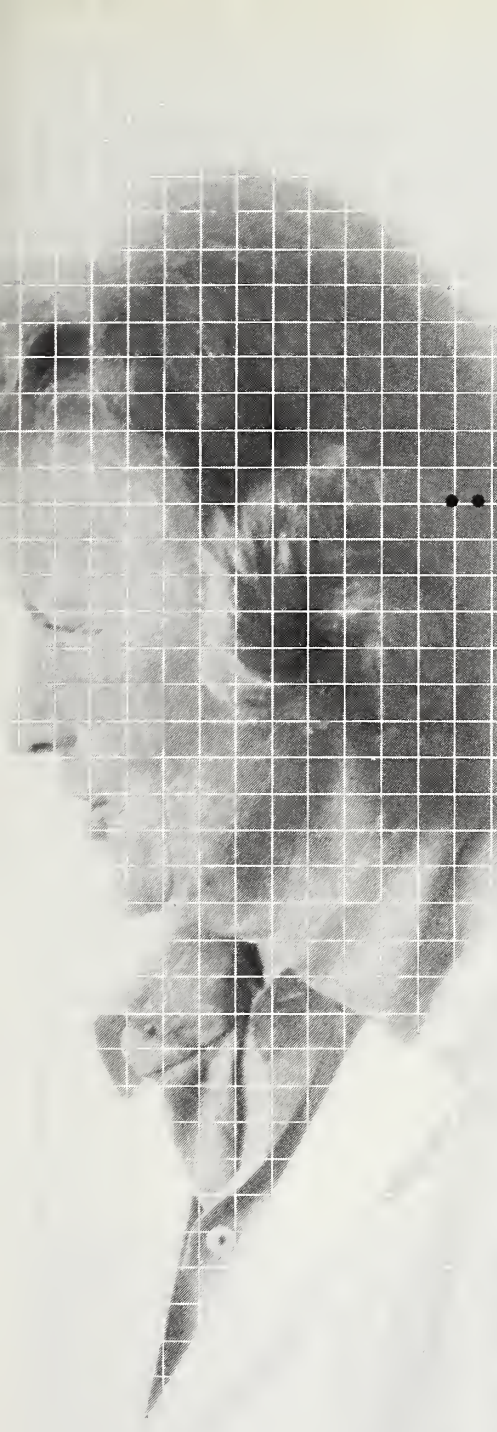
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Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

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MEDICAL JOURNAL

September 1982, Vol. 43, No. 9

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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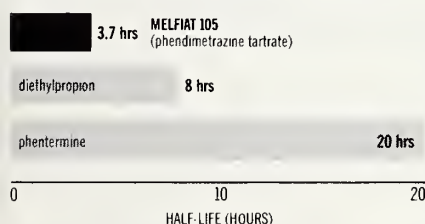
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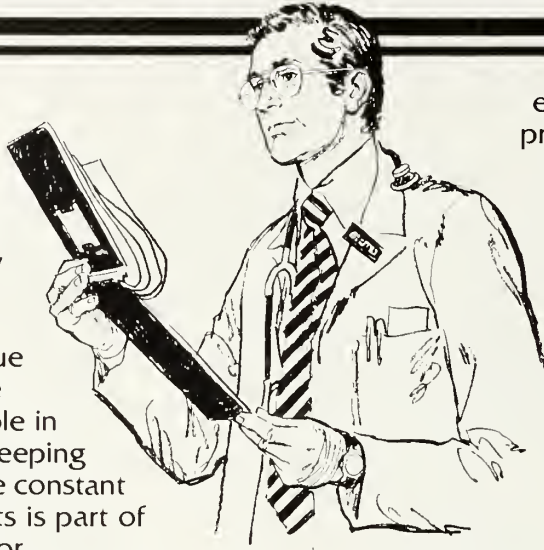
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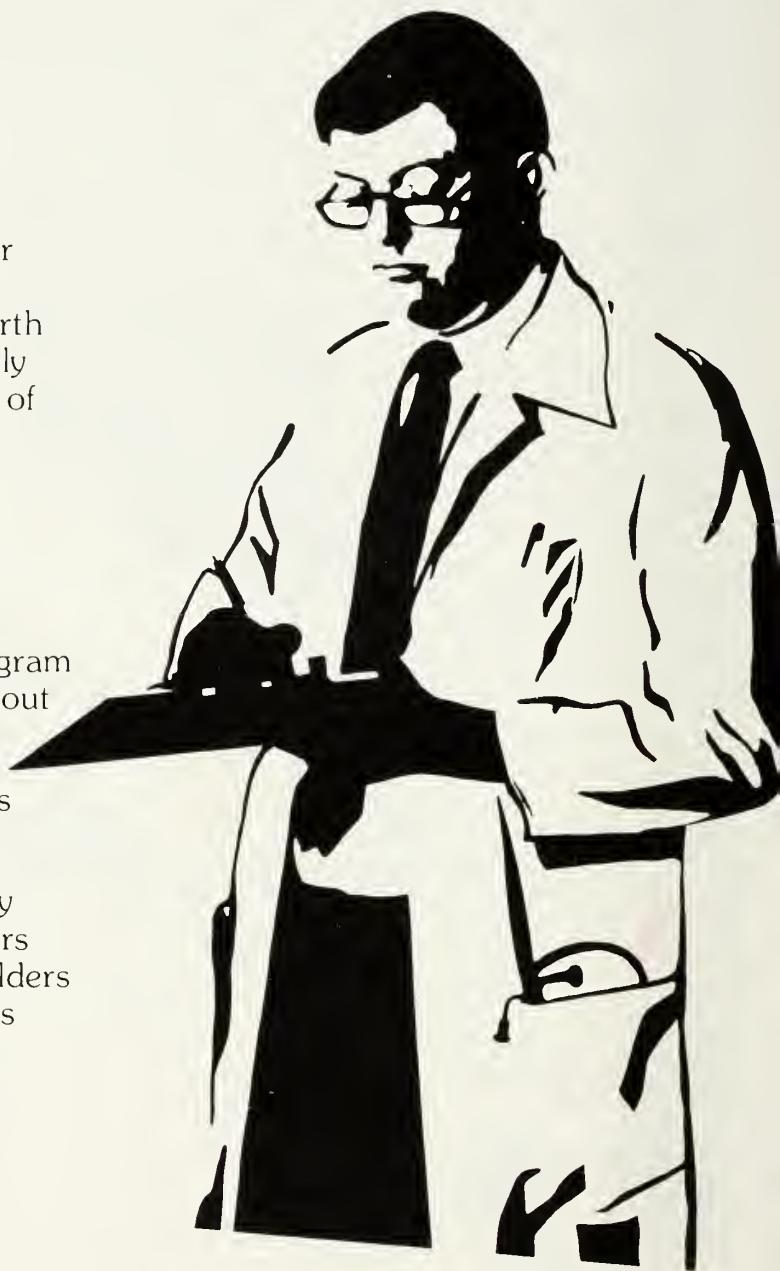
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Pneumocystis Carinii Pneumonia at North Carolina Memorial Hospital

A. Earl Haddock, MSII, and Robert J. Wells, M.D.

ABSTRACT *Pneumocystis carinii* has been recognized as a biological entity for over 70 years and associated with disease for 40 years. In the present era of intensive cancer and immunosuppressive therapy and organ transplantation, *P. carinii* has emerged as a clinically significant pathogen as the patient population at risk is increasing. High mortality rates in untreated cases and availability of effective therapy make heightened awareness of this disease and its symptoms highly desirable. A systematic approach to early diagnosis and treatment of *P. carinii* pneumonia is necessary for optimal care of these patients.

INTRODUCTION

P. carinii was first recognized by Chagas in 1909 in guinea pigs and subsequently noted in the lungs of other animals including man. *P. carinii* is generally considered to be a protozoan because of its structural characteristics and sensitivity to antiparasitic agents. However, it has ultrastructural properties and staining affinities that have led some investigators to classify it as a fungus.¹

Clinically significant disease caused by *P. carinii* occurs in all age groups but primarily in patients with congenital or acquired immunologic disorders, those who are malnourished or those receiving immunosuppressive therapy for malignancies or organ transplantation. The disease occurs sporadically as well as in epidemics with an overall attack rate in the United States of 0.3 cases per 100,000.² *P. carinii* is the most common cause of interstitial pneumonia in leukemic children in the United States with an estimated incidence of 1% although it has reached 20% or higher in some institutions.³

We describe here the experience at North Carolina Memorial Hospital and present a review of the literature about *P. carinii* pneumonia.

PATIENTS

All cases of *P. carinii* infections reported at North Carolina Memorial Hospital from January 1970 through January 1982 were reviewed. A total of 16 cases were found in the medical records department by direct and cross reference subject headings. All the patients in Table 1 have a definitive diagnosis based on the presence of *P. carinii* in lung tissues obtained by various methods and stained with standard silver stains. A diagnosis of *P. carinii* pneumonia was suspected on clinical findings in the six patients represented in Table 2. Hypoxia, tachypnea, fever, non-productive cough, interstitial pneumonia by chest x-ray and response to appropriate antimicrobial therapy were the basis of the clinical diagnosis. Childhood leukemia was the primary underlying disease of eight of the 10 children reported in this review. The presenting symptoms and signs of *P. carinii* infection were noted within 1 to 35 months (median three months) of primary diagnosis of leukemia. The six patients in remission were receiving prednisone along with methotrexate and 6-mercaptopurine. Pa-

tient #3 was successfully treated with pentamidine isothionate; the remaining children with leukemia were treated with Trimethoprim-sulfamethoxazole (TMP-SMZ). Patient #14 clinically had *P. carinii* pneumonia twice and responded favorably to TMP-SMZ each time. Patient #2 died of respiratory failure and at autopsy *P. carinii*, cytomegalovirus and *klebsiella pneumoniae* were noted in the lungs. Two patients had a diagnosis of a primary immune deficiency disease. Patient #4 was successfully treated with TMP-SMZ while Patient #5 died despite treatment with both TMP-SMZ and pentamidine.

The adults represented in this review generally acquired *pneumocystis* at longer intervals after the diagnosis of the primary disease than did the children. All the adults with *pneumocystis* pneumonia had a malignancy or were being treated with immunosuppressive agents.

Patient #10 was a 32-year-old alleged male homosexual who had histologic evidence of a previous cytomegalovirus infection. He also had been treated for vasculitis with adrenal steroids. Despite TMP-SMZ therapy he expired of respiratory failure. In all, four of the 17 suspected or proven cases of *P. carinii* pneumonia in 16 patients were fatal.

The presenting signs and symp-

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Reprint requests to Dr. Wells at Burnett-Womack Clinical Sciences Building 229 H, Chapel Hill, N.C. 27514

TABLE 1. Confirmed Cases

Pt.	Age/Sex	Underlying Disease	Time* Months	Method of Diagnosis	Signs	WBC Cells/mm ³	pH	Arterial pCO ₂ mm/Hg	pO ₂ mm/Hg
1.	4 10/12 M	ALL (induction)	1	Lung biopsy	cough, fever	6,900	7.56	13	95
2.	7 F	ALL (in remission)	35	Autopsy	cough, fever	6,900	7.5	29	27
3.	4 2/12 M	APL (in remission)	4	Lung aspirate	cough, fever	5,200	7.43	36	51
4.	5/12 M	Combined immuno-deficiency	3	Lung biopsy	fever, dyspnea	9,300	7.36	41	28
5.	6/12 F	T cell immune deficiency		Lung biopsy	cough, fever	25,700	7.41	31	45
6.	57 M	Lymphoma	2	Transbronchial biopsy	fever, dyspnea	3,500	7.48	23	119
7.	57 M	CLL	84	Transbronchial biopsy	fever, dyspnea	164,000	7.53	24	37
8.	48 M	Lymphosarcoma	120	Transbronchial biopsy	fever, dyspnea, cough, chills	8,100	7.54	24	57
9.	72 M	Oat cell carcinoma of lung	5	Autopsy	fever, cough	12,100	7.50	22	42
10.	32 M			Transbronchial biopsy	fever, dyspnea, weakness	3,700	7.48	27	56

ALL = Acute lymphocytic leukemia

APL = Acute promyelocytic leukemia

CLL = Chronic lymphocytic leukemia

*Time period between diagnosis of primary disease and *P. carinii* infection

toms of this group of patients are listed in the tables. Fever, cough, respiratory alkalosis were seen in all patients. Hypoxia was present in all patients studied although arterial blood gases on three patients were not obtained while they were breathing room air. In addition, all patients had interstitial infiltrates on chest x-ray.

DISCUSSION

The age, sex and race distributions of patients with *P. carinii* reflect the epidemiological characteristics of the underlying primary disease.² There are no clear-cut seasonal variations or geographic patterns.⁴⁻⁶ Canine *P. carinii* has been reported as the etiological agent of chronic respiratory distress in dogs but no connection between animal

and human *P. carinii* infection has been established.^{7,8}

Person-to-person spread has been suggested from case reports of *P. carinii* infections in families and hospital roommates. Fatal *P. carinii* pneumonia has been reported in two patients with lymphoma who were in adjacent hospital beds for five weeks. Two other patients with systemic lupus erythematosus who shared a hospital room also were reported to develop *P. carinii* infections. In addition cases in both a husband who had acute lymphoblastic leukemia in remission and a wife who was previously well have been reported. Interestingly, their daughter two months earlier had bilateral pulmonary infiltrates which gradually improved.⁹

Latent infections have also been

noted but their clinical significance is unclear. In the animal model latent infection can be experimentally activated by steroid administration or protein deprivation.¹⁰⁻¹² Glucocorticoids are well established as therapeutic agents for specific malignancies and there may be a relationship between glucocorticoid therapy and *P. carinii* infection.^{4,9,13-15} Autopsy reports show that *P. carinii* occurs frequently without clinically apparent illness.^{16,17} Perra evaluated 301 post-mortem specimens; 40 were positive for *P. carinii* and 39 of the 40 were children with acute lymphoblastic leukemia. Clinically significant pneumonias were not observed. Hamlin reviewed three groups at post-mortem; in group 1, of 300 patients with leukemia or lymphoma, 14 had *P. carinii*; in

TABLE 2. Suspected Cases

Pt.	Age/Sex	Underlying Disease	Time* months	Signs	WBC cells/mm ³	pH	Arterial pCO ₂ mm/Hg	pO ₂ mm/Hg
11.	5 5/12 M	ALL in remission	19	cough, headache, fever	4,000	7.56	24	45
12.	4 6/12 M	ALL in remission	3	cough, fever	1,200	7.52	31	53
13.	13 9/12 F	ALL in remission	1	cough, fever	4,700	7.51	21	34
14.	3 3/12 F	ALL in remission	3, 12	cough, fever	3,300	7.46	28	58
15.	16 M	APL consolidation	2	cough, fever, chills	6,700	7.52	24	41
16.	36 M	Thymoma	60	dyspnea, cough	2,200	7.40	27	42

ALL = Acute lymphoblastic leukemia

APL = Acute promyelocytic leukemia

*Time period between diagnosis of primary disease and *P. carinii* infection

group 2, one of 110 stillborns and infants had *P. carinii*; and group 3, the remaining 245 consecutive cases did not have *P. carinii*.¹⁷ Esterly reviewed 200 consecutive autopsies at a general hospital; only eight were positive for *P. carinii*, only one patient had been symptomatic, and seven had malignant disease.⁹ Thus, man apparently harbors *P. carinii* without clinical disease with a higher "carrier rate" in patients with neoplastic disease. Immunosuppression, prolonged hospitalization and exposure to carriers thus may favor the development of *P. carinii* pneumonia in the susceptible patient. However, a contagion pattern could not be established in *P. carinii* infections at a children's cancer hospital.¹⁸ Similarly in our patients, no pattern could be identified although many of the children were exposed to common medical personnel and in some cases each other. Recent evidence suggests that *P. carinii* as well as other opportunistic infections may result from an immunodeficient state produced by sexually transmitted infectious agents or exposure to a common environmental agent.^{19,20} Cytomegalovirus (CMV) infections are associated with immune defense abnormalities such as decreased lymphocyte proliferation and decreased interferon production.^{21,22} Drew et al. report serologic evidence of CMV in 92% of homosexual men compared with 54% heterosexual men.²³ The association of Kaposi's sarcoma and *P. carinii* pneumonia was brought to medical attention by the Centers for Disease Control in the summer of 1981.^{24,25} This unique group possibly represents an infection induced immune deficiency which may predispose to opportunistic infections and Kaposi's sarcoma.

CLINICAL MANIFESTATIONS AND DIAGNOSIS

The clinical features of *P. carinii* pneumonia are not specific. Symptoms can develop suddenly, progressing rapidly over a few days or insidiously over several weeks. The usual duration of symptoms is less than two weeks with a range of three to 120 days (mean 13.6 days).² Dyspnea, fever, a non-productive cough

and lethargy are most frequent. Clinical signs include tachypnea and cyanosis usually without significant auscultatory pulmonary findings. Arterial blood gas measurements usually reveal hypoxia and mild to moderate respiratory alkalosis. Chest x-ray shows interstitial pulmonary infiltrates without a definitive distribution. The characteristic clinical triad in patients with *P. carinii* pneumonia at admission examination is hypoxia, tachypnea and interstitial infiltrates by x-ray.⁶

The diagnosis of *P. carinii* infection depends on the demonstration of the organism by histopathologic methods. Because of the lack of sputum production and interstitial location of the organism, sputum cultures, cytology, bronchoscopy with brushings, cough plates and tracheal aspirations are unreliable.⁶ Needle aspiration of lung tissues is advocated by some but has a reported morbidity rate of 20% and provides a limited quantity of tissue. The procedure gives a false negative rate of greater than 7% overall. The major complications of needle aspiration of the lung are pneumothorax and hemoptysis.²⁶ Endobronchial brush biopsy has a reported 26% false negative rate.²⁷ Thus open lung biopsy appears to be the procedure of choice for the diagnosis of *P. carinii* infections because adequate tissue for diagnosis is obtained. In experienced hands there are few complications. Ballantine reports a survival rate of 91.3% in cases of *P. carinii* pneumonia which were diagnosed early in the illness by open lung biopsy.⁶

TREATMENT

The mortality of *P. carinii* pneumonia in the untreated immunosuppressed patient approaches 100%.²⁸ Pentamidine isothionate, introduced in the 1950s significantly reduced mortality due to *P. carinii*. Data from the Center for Disease Control showed a recovery rate of 63%, but 46.8% of those patients receiving pentamidine for nine days or more had significant adverse reactions to the drug. Renal impairment occurred in 23.5%, abnormal liver function tests in 9.5%, hypoglycemia in 6.2%, hematologic disturbances in 4.2%, skin rashes in 1.5%, hypocalcemia

in 12%, and injection site reactions in 18.4%. Of the 63% who recovered, 14% had a recurrence of the disease.²⁹

The development of the rat model by Hughes led to the discovery that TMP-SMZ was effective against *P. carinii* and did not produce frequent or serious adverse effects. TMP-SMZ is as effective as pentamidine, can be given by mouth and is relatively inexpensive. In addition TMP-SMZ affords effective prophylaxis against *P. carinii*.²⁸⁻³² Rats fed steroids or deprived of protein develop *P. carinii* pneumonia which is prevented when TMP-SMZ is given. In a randomized double-blind study over two years, none of 80 children with cancer developed *P. carinii* infections when treated prophylactically with TMP-SMZ, while 17 of 80 children not given TMP-SMZ developed *P. carinii* pneumonia.³¹

Although significant concerns about prolonged usage of antimicrobial agents are well appreciated, no adverse effects were noted in the initial evaluation of TMP-SMZ as a prophylactic agent for *P. carinii*. In addition, patients treated with TMP-SMZ also had a lower rate of bacterial infections.³³

Leukemic children who develop *P. carinii* infections usually do so within the first year of primary diagnosis. Generally the population at risk should be treated prophylactically for at least a year after primary diagnosis. TMP-SMZ is effective for prophylaxis in doses of 5 mg TMP, 20 mg SMZ by mouth in two divided doses per day. The therapeutic dosage schedule is 20 mg TMP, 80 mg SMZ per kg daily for 14 days by mouth in four equally divided doses. In patients unable to take medication by mouth an intravenous preparation of TMP-SMZ is now commercially available and should be administered in the same dose. The dosage schedule for pentamidine is 4 mg/kg intramuscularly daily for 14 days.³² There are no clinical studies supporting the efficacy of combined TMP-SMZ and pentamidine. Combination therapy appears to be less effective than single drug therapy in the animal model because of the toxicity as-

sociated with pentamidine.^{30,31}

Supportive therapy is an important component in the care of the patients with *P. carinii* infections. Hypoxia should be monitored and arterial O₂ partial pressure should be maintained at 70 mm Hg or higher. Insensible water loss is increased in the patient with fever or tachypnea. Therefore, adequate hydration is stressed. In view of the general decrease in the immune responsiveness of this patient population evaluation for concomitant infection is essential. Chemotherapeutic agents are generally discontinued upon entering the hospital and are resumed when the patient's condition improves.

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JOHN OF MIRFIELD [1372-1407]

I protest, however, at the finish of this little work, just as I also did at the beginning thereof, that with regard to all the things which are contained in this little tract, I myself have added nothing of my own to the matter at hand, for the reason that I have not discovered anything of my very own to add. I have simply collected the words of authoritative philosophers and scientists, as well as the opinions of practical men, and having collected them together, have written them all down in one little summary: so that poor and unlearned men who do not possess a plenty of books at hand may here be able to find, at least in a superficial degree, not a few remedies for very many diseases.

Breviarum Bartholomei, Epilogue (tr. by H. R. Aldridge)

Experience With Fluphenazine Decanoate in the Management of Chronic Schizophrenic Outpatients

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ABSTRACT Forty schizophrenic outpatients receiving depot fluphenazine were randomly selected from the population of a community mental health center. Patients were followed for up to four years and their ability to tolerate prolonged fluphenazine free periods was examined. Four patients were excluded due to intolerable side effects and six for changed diagnoses. Three patients could not be withdrawn from fluphenazine at all and only 11 tolerated drug holidays longer than one year without relapse. Patients had a lower annual hospitalization rate while taking fluphenazine. Males, paranoid schizophrenics, and those with a previous history of noncompliance were more prone to relapse. Seventy-seven percent of patients had extrapyramidal symptoms requiring anti-parkinsonian drug therapy.

INTRODUCTION

Several studies have described the therapeutic effects of depot phenothiazines in the management of schizophrenic outpatients.¹⁻⁶ These medications are especially valuable in the treatment of patients who are noncompliant with oral medications. We have examined our experience with the use of fluphenazine decanoate (Prolixin decanoate, Squibb) in 40 chronic schizophrenic outpatients.

METHODS

The study group was drawn from an outpatient population being followed at the Davidson County Mental Health Clinic in Thomasville, North Carolina. Forty patients with the diagnosis of chronic schizophrenia or schizo-affective illness who were receiving depot fluphenazine at some time during the previous 12 months were selected from the clinic files in June, 1977.

For each patient, the study period began in the month of initiation of depot fluphenazine therapy or in June of 1976, if the first dose of fluphenazine preceded this date. During the study, only the decanoate preparation of fluphenazine was given. Frequency of clinic visits and dose of fluphenazine were determined by clinical response. An effort was made to discontinue fluphenazine by decreasing the dose or increasing the interval between injections. Concurrent use of other psychotropic medications was minimized. Patients were followed for up to 48 months until termination of the study in June, 1980, or loss of follow-up.

At the completion of the study, patients were divided into those who had had rest periods, defined as fluphenazine free intervals exceeding 30 days, and those who had not (Group I). The former were further subdivided into those in whom fluphenazine was successfully discontinued (Group II) and those in whom it was not (Group III). A fluphenazine free period of one year or greater without re-hospitalization, resumption of flu-

phenazine, or loss to follow-up was arbitrarily chosen to represent a successful outcome, on the basis of studies which had indicated maximal relapse rate within the first year of fluphenazine withdrawal.⁷⁻⁹ Patients terminated due to unacceptable side effects or change in diagnosis were excluded from further analysis. The following criteria were examined for Groups I through III: (1) age, (2) sex, (3) diagnosis (including subtypes of schizophrenia), (4) number of hospitalizations per year during the four-year period prior to onset of fluphenazine therapy, (5) number of hospitalizations per year in the study period, (6) number of hospitalizations per year while on fluphenazine during the study, (7) number of hospitalizations per year during the study while off fluphenazine, (8) whether the patient was still taking fluphenazine at the termination of the study, (9) whether patient's fluphenazine free periods were intentional or due to noncompliance, (10) administration of concurrent psychotropic agents during the study period, and (11) incidence of extrapyramidal side effects while on fluphenazine. The

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TABLE I
Description of Patients

	Group I	Group II	Group III	Terminated Patients
Number of Patients	3	11	16	10
Sex				
Male	2	0	9	4
Female	1	11	7	6
Age, years				
20-29	1	1	4	3
30-39	1	5	6	0
40-49	1	4	4	5
50	0	1	2	2
Diagnoses				
Schizophrenia				
paranoid	2	1	6	
undifferentiated	1	9	9	
Schizo-affective disorder		1	1	

number of hospitalizations per year was calculated by multiplying the number of hospitalizations during the interval in question times 12, and then dividing the product by the number of months of follow up.

Means and standard deviations were evaluated where appropriate and statistical analysis was performed with the two tailed t-test for unequal sample size.

RESULTS

The demographic characteristics of the 40 patients entered in the study are summarized in Table I. Three patients (Group I) received depot fluphenazine without interruption during the course of the

study. Attempts to decrease their doses of fluphenazine led to exacerbation of symptoms and in one case to suicide.

An additional 10 patients, four males and six females, were terminated for reasons unrelated to the variables investigated. In six, diagnoses were altered to manic-depressive illness during the course of the study. Insomnia and impotence necessitated discontinuation in a seventh patient. Three patients developed tardive dyskinesia, one being among the six patients with manic-depressive illness. A tenth patient was terminated because of extrapyramidal side effects.

The remaining 27 patients had one

or more rest periods off fluphenazine for 30 days or longer. Eleven patients (Group II) were able to remain off depot fluphenazine for periods of more than 12 months. Characteristics of these patients are shown in Table II. The patients able to tolerate prolonged fluphenazine free intervals were female, average age of 39 years, and had the diagnosis of chronic undifferentiated schizophrenia. In 10 (91%), the initial discontinuation of fluphenazine was intentional and only in one patient was it due to noncompliance. Before withdrawal, doses for Group II patients ranged from 6.25 mg per month to 50 mg every two weeks. Seven of the 11 patients were followed until termination of the study in June of 1980. Three patients were lost to follow-up after approximately three years. A single patient died of metastatic carcinoma. The number of hospitalizations per year while on fluphenazine was zero, but while off was 0.28 ± 0.45 . This was statistically significant at the 0.01 level. All received oral antipsychotic drugs when not receiving fluphenazine. At the termination of the study period, two patients had been rehospitalized, one was in a rest home, and two required reinitiation of depot fluphenazine. At the end of the study, four were taking oral antipsychotics. Five patients (45%) had required oral antipsychotics

TABLE II
Outcome in Group II Patients^a

Pt.	Age	Sex	Diagnoses	Duration of Rest Pds. (months)	#hosp/yr. on Fluphenazine	#hosp/yr. off Fluphenazine	Outcome	EPS while on Fluphenazine
1	36	F	CUT	18	0	0	stable	+
2	36	F	CUT	25 ^b	0	1.4	hospitalized	+
3	64	F	paranoid	13	0	0	died 2/79	
4	48	F	CUT	24 ^c	0	0.5	bone cancer	+
5	43	F	CUT	13 ^d	0	0	lost to follow-up 6/79	-
6	40	F	CUT	24	0	0	lost to follow-up 3/79	+
7	42	F	schizo-affective	41 ^e	0	0.59	transferred 7/79 to care of LMD	-
8	33	F	CUT	36	0	0	hospitalized	+
9	24	F	CUT	27	0	0	stable	+
10	30	F	CUT	21	0	0	stable	-
11	32	F	CUT	22	0	0.55	rest home	+
							stable	-

^aAbbreviations used throughout Tables II & III: CUT = Chronic Undifferentiated Type Schizophrenia, EPS = Extrapyramidal Side Effects.

^b12 and 15 months, respectively.

^cHospitalized after 14 months rest period; then begun on oral medications.

^d1 and 12 months, respectively.

^e5 and 36 months, respectively.

TABLE III
Outcome in Group III

Pt.	Age	Sex	Diagnosis	Duration of fluphenazine therapy	#hosp/yr on Fluphenazine	#hosp/yr off Fluphenazine	Outcome	EPS while on Fluphenazine
1	28	M	paranoid	45	0	0	stable	+
2	28	M	paranoid	39	0	0	stable	+
3	30	M	CUT	40	0.3	1.5	stable	+
4	43	M	CUT	47	0	0	stable	-
5	35	M	paranoid	4	0	0.27	lost to follow-up 3/80	-
6	37	M	CUT	45	0	4	stable	-
7	21	M	CUT	12	0	1	hospitalized	+
8	50	F	paranoid	47	0	0	stable	-
9	40	F	schizo-affective	44	0	3	stable	+
10	35	F	paranoid	38	0	1.2	stable	+
11	28	F	CUT	28	0	2.4	stable	+
12	44	F	CUT	45	0.27	0	stable	-
13	36	F	CUT	33	0	3.2	hospitalized	+
14	57	F	CUT	46	0	1.6	hospitalized	+
15	47	M	CUT	8	0	2.4	lost to follow-up 5/79	+
16	33	M	paranoid	11	0	0	suicide 8/77	+

while on IM fluphenazine and one patient (9%) had taken concomitant antidepressants. Seven patients (64%) experienced extrapyramidal symptoms and required oral anticholinergics.

Patients in Group III (Table III) who were unable to tolerate extended fluphenazine free periods had an average age of 37 years. Nine patients (56%) were males. Six patients (37.5%) were diagnosed as paranoid schizophrenics as opposed to only one (9%) in Group II. Four patients were taken off IM fluphenazine intentionally but 12 stopped voluntarily (noncompliance). Doses tended to be slightly higher in this group but none received more than 50 mg every two weeks. As in Group II, patients had significantly fewer hospitalizations per year while taking fluphenazine than while not: 0.04 ± 0.1 versus 1.29 ± 1.36 (probability < 0.01). At the termination of the study, three patients were hospitalized, one had committed suicide (August, 1977) while on IM fluphenazine, two had been lost to follow-up in the past year, and the remaining 10 were clinically stable on depot injections. Six patients (47%) had received oral antipsychotics simultaneously with fluphenazine, but only two patients (13%) had been taking antidepressants. Extrapyramidal symptoms were seen in 11 patients (69%), all of whom were treated with anticholinergic drugs.

Intergroup comparison reveals the higher incidence of males, paranoid schizophrenics and noncompliance in Group III compared to Group II. Age, use of oral antipsychotics, and incidence of extrapyramidal symptomatology were essentially the same in the two groups. The number of hospitalizations per year during the study and in the four-year period before fluphenazine was examined in the two groups and was not significantly different (Table IV). In addition, during the study period, there was no statistical difference between Group II and Group III in terms of the number of hospitalizations per year while taking IM fluphenazine. As might be expected, patients in Group III had a significantly higher number of admissions

per year while off fluphenazine, and had a significantly shorter duration of fluphenazine free periods.

If Groups I and III are combined, 13 of the patients followed during the study period could not be successfully withdrawn from fluphenazine without relapse within one year. Four of the 11 Group II patients (36%) were known to relapse during the course of the study; three within their second fluphenazine free year, and one within the third year. Therefore, the relapse rate after discontinuation of fluphenazine was 67%.

Eighteen (67%) of those taking fluphenazine required anticholinergic therapy for extrapyramidal symptomatology at some time during the study. Fifteen patients were still

TABLE IV
Comparative Hospital Rates in Groups II and III

	Mean Value ± SD Group II	Mean Value ± SD Group III	T df	Significance
Number hosp/yr before study	.57 ± .40	.79 ± .23	1.6143 25	NS
Number hosp/yr during study	.17 ± .45	.41 ± 1.36	1.6819 25	NS
Number hosp/yr while on Fluphenazine	.00 ± .00	.04 ± .097	1.2170 25	NS
Number hosp/yr while off Fluphenazine	.28 ± .45	1.29 ± 1.36	2.3675 25	p 0.05
Total duration of Fluphenazine Therapy (months)	15.27 ± 7.19	33.25 ± 15.58	3.5602 25	p 0.01

taking fluphenazine at the end of the study in June, 1980. Fourteen (47%) were on antiparkinsonian agents, six (20%) had had their anticholinergics discontinued and seven (33%) had never required them.

DISCUSSION

Our experience with fluphenazine decanoate therapy in a community mental health setting is in agreement with previous reports.¹⁻⁶ The patients studied had significantly fewer hospitalizations while taking fluphenazine. Ten percent of patients could not tolerate fluphenazine free periods at all. Of those patients who had drug holidays, 53% relapsed within one year, 10% during the second year, and 3% during the third year. This is in accord with the results of other discontinuation studies which show 30% to 80% of patients relapsing over follow-up periods of one to four years⁷⁻¹⁰ with maximum relapse rates during the first year.⁷ In comparison, relapse rates in schizophrenics who continue to receive depot fluphenazine vary from 10% to 45%.¹¹⁻¹⁵

We found relapsers more likely to be male, to have a diagnosis of paranoid schizophrenia, and to have a history of noncompliance. Some investigators discount noncompliance as a determinant of relapse, usually citing equal or near equal relapse rates with oral and depot phenothiazines.¹²⁻¹⁴ However, 75% of our relapsers in the first year were non-compliers and the only noncompliant patient in Group II relapsed after 14 months. Total duration of depot fluphenazine therapy prior to drug holiday was an uncontrolled variable in our study. There is no agreement as to how long depot phenothiazines need to be continued before they may be safely withdrawn. Johnson has shown that relapses occur more frequently in the six months after discontinuation than when fluphenazine is continued, even after four years of previous maintenance therapy.⁷ This difference is statistically significant for maintenance periods up to three years. Therefore, he concluded that it is unwise to allow drug free periods of

three months or longer in patients who have received depot fluphenazine for less than three years. Patient age, said to be of predictive value,¹² was not a prognostic factor in our patients. Likewise, the simultaneous use of oral psychotropic medications did not seem to distinguish relapsers from nonrelapsers. It is conceivable that patients non-compliant for fluphenazine injections would also be unlikely to take their oral medications regularly and would be prone to relapse regardless of their mode of therapy. No attempt was made to use the same dosages of fluphenazine in all patients; rather, dose and dosing interval were individualized on the basis of clinical response, as has been recommended.^{16,17} Doses were, however, kept within the traditional range and none received "very high dose" regimens.^{18,19} Patients in Groups I and III received slightly higher doses, probably due to the greater ability of Group II patients to tolerate reduction in dosages.

Extrapyramidal symptomatology was seen in three-fourths of the patients. Differences in the frequency of side effects in various studies²⁰⁻²² may reflect variations in dose, patient population, and the spectrum of severity of drug induced movement disorders. Our incidence of 77% is not unusual and only one patient had extrapyramidal symptoms severe enough to require discontinuation of fluphenazine and termination from the study. Tardive dyskinesia was seen in 7.5% of the initial patient population, all of whom were terminated from the study. This incidence is considerably lower than the 22% reported by Gibson at the end of three years of therapy with long acting phenothiazines²³ and 54% seen by Chouinard, et al. after 28 weeks.²⁴ Theoretically, high potency antipsychotic agents such as fluphenazine should be more likely to induce both pseudo-parkinsonian symptoms and tardive dyskinesia. All antipsychotics are, however, capable of producing tardive dyskinesia, and no particular one being less likely than another to do so.²⁵ On the basis of our data, we cannot derive a specific patient profile such

as that reported by Blum,²⁶ which predisposes to the development of side effects from fluphenazine.

Acknowledgments

Special thanks to Dael Broadway, Rita Broadway, Mitch Nesse, and William Forbis of the Davidson County Mental Health and Mental Retardation Center. We would also like to thank Dr. David Goode for his constructive criticism, and Sue Wilcox for her typing of this manuscript. The work was supported in part by a N.I.M.H. Rural Mental Health Training Grant.

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President's Acceptance Speech

Marshall S. Redding, M.D.

There is something magic about tonight. A little over a year ago I had no idea I would be standing here, but as I do a real sense of humility engulfs me.

When Harry Truman assumed the office of President of the United States following the sudden death of Franklin Roosevelt, his first remark to the press was, "Well, boys, if you've ever had a load of hay fall on you, you know just how I feel."

In preparing to assume the responsibilities of president of the Medical Society, there have been times when I have felt like Truman. But, as this hour drew near, I took courage from the words of the great 17th century scientist, Sir Isaac Newton. In a letter to fellow scientist Robert Hooke, Newton said, "If I have seen farther than other men, it is by standing upon the shoulders of giants."

During my term as president I fully expect to make a significant and lasting contribution to the progress of medicine in this state. Lest you think me too bold, let me hasten to add I expect to do this not because of any surplus of confidence in my own ability. I expect that because, as president of one of the most respected medical societies, I, too, stand on the shoulders of giants.

Consider the giants who have served you as past president. The list of their accomplishments is impressive — from the polio vaccine campaigns that wiped out polio-myelitis in our patients in the 1950s

and '60s to the protection of our membership through the establishment of our own insurance company. Not to mention the innumerable and constant legislative fights to protect the quality of medical



Marshall S. Redding, M.D., a native of Greensboro, earned his undergraduate degree in chemistry and his medical degree (1966) from Duke University. Following his internship at the US Naval Hospital in Portsmouth, Virginia, he completed his residency in Ophthalmology at the US Naval Hospital in Philadelphia. Redding has practiced medicine in Elizabeth City since 1971, when he established the Albemarle Eye Care Center there. Active in organized medicine, he served as president of the NC Ophthalmology Society 1981-82 and now serves as president of the NC Medical Society. Redding is a fellow of both the American Academy of Ophthalmology and the American College of Surgeons, Chairman of the Board of Trustees of Albemarle Hospital in Elizabeth City, staff ophthalmologist at Chowan Hospital in Edenton, and assistant professor at Eastern Virginia Medical School in Norfolk, Virginia.

care. The success of each of these ventures was made possible in whole or in part through the efforts of our past presidents.

But the past presidents are not the only giants who dwell among us. There are countless others, distinguished delegates, committee members, and officers, who have made a lasting mark on the progress of health care in North Carolina. And let us never forget that the ultimate success of any organization rest with its members. You are the real giants upon whose shoulders your great leaders have stood. My confidence in the good work the society will do in the coming year stems from my confidence in you.

Though I won't take time tonight to recite the details of what I hope we will accomplish, I do want to leave you with this one proposal: The foremost hope and goal of my presidency is to establish the solidarity of this society. I like that word. It describes that intensification of unity we have come to so closely associate with the Polish freedom movement. Solidarity is the likeness of interests, objectives, and responsibilities that enables a group of persons to think and act as one. And that is precisely what we need in order to meet the challenges of and obstacles to practicing medicine in the 1980s.

The solidarity of this society will determine our success or failure in dealing with government regulation and intervention in health care. In the survey of our membership completed last month, 61% of you said legislative activities should be the

Acceptance remarks, Pinehurst, N.C., May 8, 1982

society's first priority. Here, more than anywhere else, we must speak and act as one. We must be aware that our enthusiasm for and loyalty to our various specialties do not pull us apart. Like it or not, legislators listen to numbers. Whom do we think the legislators listen to most — 160 ophthalmologists or 6,000 physicians? You see, as a united medical society, we carry far more political clout than we do when acting in our various specialty groups alone. There is certainly a place for ophthalmologists to speak as ophthalmologists or for internists to speak as internists. But we must never forget that many of the crucial legislative issues affect all of us and will be decided on the basis of sound medical judgment only if physicians present a united and credible position.

The solidarity of this society will also determine our success or failure in dealing with the demands of special interest groups. Organized labor demands more and more health care benefits, and big business, who foot the bill for these benefits, cries for cost containment. The number of patients clamoring for Medicare and Medicaid services swells, over-running budget allocations, while the federal government points its finger at hospitals and doctors and says "you charge too much." Increasing numbers of paramedical groups are receiving legislative status in the health care field. Paramedical groups often promise to provide the physician's care at a greatly reduced cost. Many are demanding the right to perform procedures that

the law and sound medical advice have traditionally reserved for the skilled hand and tutored judgment of the licensed physician. These various special interest groups often sway the government, the media, and the public because of their numbers and claims of reduced cost. If physicians are to retain control over their own profession, they must speak with one voice in the public forum. The progress of medicine in North Carolina depends upon the solidarity of this medical society.

Whether we achieve that solidarity in the coming year or not depends upon you. If you have ever had the occasion to look at an organizational chart of the medical society, you'll find that the membership is located at the top of the chart. The President, the House of Delegates, the Executive Council, the Executive Director and his staff are all subject to the will of the membership. You nominate and elect the officers of this society through your House of Delegates; we serve at your pleasure. You pay the dues. There would be no convention if you weren't here. You are the North Carolina Medical Society. You are the giants upon whose shoulders we stand. We will see only as far as your shoulders are tall. You will decide the future of medicine in this state.

A story is told of a group of boys in ancient Greece who once tried to trick a wise old philosopher. One of the boys caught a small bird and announced to his companion that he

was going to ask the old man if the bird concealed in his hands was dead or alive. If he replied that the bird was dead, the boy would release it and let it fly away. If he said the bird was alive, the boy would crush it. They thought the scheme to fool the old man was flawless. But when the boy confronted the philosopher with the dilemma, he shrewdly answered, "The fate of the bird is in your hands, my son." The fate of the North Carolina Medical Society, the progress of American medicine, and the health of this nation are in your hand. It is an honor to serve as your president. The accomplishments of our past presidents, the support of our House of Delegates, and your commitment to our common goals have made me bold. Tonight I stand upon the shoulders of giants. With your help I pledge to perform every duty of office, meet every challenge, and seize every opportunity to advance the work of this society in its great quest for the elimination of suffering and disease and the extension of life and health.

We are on this earth but a very short time; each of us in our own way makes our mark — the quality and depth of that mark is only limited by our individual imaginations and resourcefulness and the will of God. May tonight be no exception, may each day that follows be a more perfect one, and may we work together for the uniqueness of this year. May our mark be deep and our candle burn bright that we might see our way clearly together.

The Coastal Plains Region Neonatal Follow-Up Program: Preliminary Results

S. C. Engelke, M.D., R. L. Saldanha, M.D., and A. E. Kopelman, M.D.

Neonatal and infant mortality rates in North Carolina are the fourth highest in the United States. Within the state, they are highest in the Coastal Plains Region.^{1,2} The East Carolina University Neonatal Follow-Up Program was funded in 1980 by the State Division of Health Services both to provide early diagnostic services and as a longitudinal study of efforts to improve perinatal care in the region. We report here the preliminary results of our program.

DESCRIPTION OF PROGRAM

Specific outcomes evaluated after discharge of high-risk infants from the neonatal intensive care unit (NICU) include physical health, neurological-cognitive development, family functioning, and the incidence of parenting disturbance. The follow-up clinic is held weekly at the Greenville Developmental Evaluation Clinic and is staffed by two neonatologists, two psychologists, a social worker, two physical therapists, a clinic coordinator, and a nurse clinician. The program emphasizes early identification of problems with primary care at the local level. Continuity has been facilitated by close communication with referring physicians and community agencies in the region.

Follow-up candidates are selected

from a 29-county population of neonatal intensive care patients based on specific criteria judged as particularly high risk for neuro-developmental problems. Testing is scheduled for 6, 12, 18 and 36 months of age, adjusted for prematurity. Medical, social and follow-up data are collected on approximately 600 items.³ Validated assessment measures include a composite Psychosocial Inventory, the Parmelee Newborn Neurological Exam, Neonatal Perception Inventory, Primitive Reflex Profile, standardized infant physical and neurological assessments, Denver Development Screening Test (DDST) and Bayley Scales of Infant Development.

RESULTS

Follow-up program results for infants born during the period Janu-

ary-December 1980 are shown in the accompanying table. Seventy percent of admissions were born at the regional center. One-third of these were local residents; the other two-thirds were maternal referrals from other counties. Thirty percent of admissions were transported to the regional center by the transport team. Although birth weight and mortality did not differ, inborn babies had significantly higher five minute Apgar scores ($p < 0.005$), shorter duration of intensive and total hospital care ($p < 0.01$) and lower hospital costs ($p < 0.01$).

Of the 294 survivors, 198 met one or more of the specific follow-up criteria we had chosen: birth weight less than 1,250 grams (37), intrauterine growth retardation (47), ventilator management (114), proven sepsis (18), intracranial hemorrhage

TABLE
EASTERN REGION PERINATAL PROGRAM:
PRELIMINARY RESULTS

Birth Weight (grams) . .		≤ 750	751-1000	1001-1500	1501-2500	> 2500	TOTAL
Admissions	11	15	63	139	95		323
Inborn (%)	91	53	73	81	74		70
Survival (%)	27	80	90	94	95		91
Abnormal Development (%)	33	11	12	9	11		11
Number Tested	3	9	33	65	37		147

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Reprint requests to Dr. Engelke

(29), perinatal asphyxia (21), seizures (45), polycythemia (9) or psychosocial risk (52). Thirty-nine patients from Pitt County of varying birth weights and gestational ages but without the preceding risk criteria were followed as control subjects. For various reasons, 51 of the entire group were unable to be tested, resulting in a clinic follow-up rate of 74%. Preliminary developmental findings presented here are based on clinic assessments at 4-6 months of age; about one-half of the population have also been evaluated at 12 months. Abnormal development has been defined as a Bayley Mental or Motor Index less than 70 or definite delays on the most recent DDST using DDST manual guidelines. Results are expressed as a percentage of those tested.

The incidence of definite developmental abnormalities did not differ between any of the birth weight groups greater than 750 grams and was similar to the 9% incidence found in the control group. Developmental delays were not significantly associated with respirator therapy (12%), intrauterine growth retardation (0%), sepsis (0%) or polycythemia (0%), but were increased in patients with intracranial hemorrhage (54%), seizures (35%) and asphyxia (22%).

Abnormal neurological evaluation was defined as significant changes in passive or active tone, cranial nerve abnormalities or persistence of primitive reflexes. As with development, an increase in neurological abnormalities was found in patients with a history of intracranial hemorrhage (41%), seizures (29%) or asphyxia (27%) when compared with the control incidence (0%) or the total population (10%).

Neurological abnormalities were increased in infants with developmental delays (71%) and, conversely, developmental delays were associated with neurological deficits (59%). Because of this frequent association, the combined incidence of either developmental or neurological problems in the overall population (15%) was not different from the separate occurrence of neurological deficit (10%) or developmental delay (11%).

EVOLUTION OF PERINATAL CARE

Pre 1950	<i>Expectant Rx</i> - Infant care by obstetrician
1950 - 1965	<i>Intervention</i> - Improved incubators, (FiO ₂ liters); IV fluids, transfusions; (withhold feedings); gavage; (vitamin K); antibiotics (sulfa, chloro)
1965 - 1970	<i>Transition</i> - Physiology of RDS, metabolism, resuscitation; (early IV fluids); (HCO ₃ Rx); (intubation); improved servo-incubator; electronic and laboratory monitoring; earlier antibiotic treatment
1970 - 1975	<i>NICU</i> Regionalization - Transport, L/S ratio; radiant warmer; (IMV, CPAP); (Parenteral Nutrition); Duodenal feedings; (Phototherapy); Theophylline; bonding - liberal visiting
1975 +	<i>Perinatology</i> - Maternal transport; amniotic lung profile; (Betamethasone); (Isoxuprine); double wall incubator; breast milk feeding, ultrasonography; artificial surfactant?; "premie mental health," Brazelton; social awareness and intervention

Figure 1. Evolution of care. Therapies later associated with iatrogenic complications are denoted by parentheses.

Of particular interest was the finding, consistent with the work of Pascoe,⁴ of a three and one-half fold increase in significant developmental delays (26%) in infants at risk of psychosocial deprivation when compared with their incidence of neurological deficit (7%).

These results must be considered preliminary since reliability of neurodevelopment testing improves after six months of age. Also, an additional 12% of the infants tested had suspicious findings that are of unknown significance at this time.

The incidence of visual problems, which included significant strabismus and retrolental fibroplasia, was increased in infants with delayed development (47%), neurological

deficit (64%) or a history of intracranial hemorrhage (35%), seizures (21%) or asphyxia (18%) when compared with the overall incidence (10%) or control group (4%). Hearing impairment diagnosed by screening techniques was associated with developmental delays (29%) and neurological abnormalities (28%) when compared with its occurrence in the total group (7%) or in controls (4%).

DISCUSSION

The evolution of perinatal care nationwide has resulted in improved survival for full term and more recently for increasingly smaller premature infants. However, therapeutic "breakthroughs" continue to be associated with iatrogenic complications discovered later, emphasizing the need for caution in introducing new therapies (Figure 1).

Interpretation of survival and outcome data are affected by a number of factors, including birth weight grouping, time period of care, individual nursery policies, place of birth, and whether results are expressed as rate per thousand births or prevalence in survivors. Longer follow-up with more sophisticated testing is needed to detect subtle deficits and secondary emotional effects.

In addition, the outcome of the low birth weight infant is influenced by a complex "continuum of care-taking casualty" (Figure 2). Recent studies have clearly documented the major influence of the psychosocial environment on development as well as on the occurrence of abuse and neglect.⁴⁻⁶ Disorders of growth, recurrent infection, pulmonary function, hearing and vision and other physical and neuro-developmental problems require careful attention by all who follow these vulnerable infants.

Nevertheless, dramatic improvements in specialized care in the last few years have resulted in improved outcome for infants with factors formerly considered high risk, such as intrauterine growth retardation.⁷ A review of the literature indicates that survival of the premature newborn has increased from 5% in those weighing less than 1,000 grams at birth in 1965 to about 50% currently.

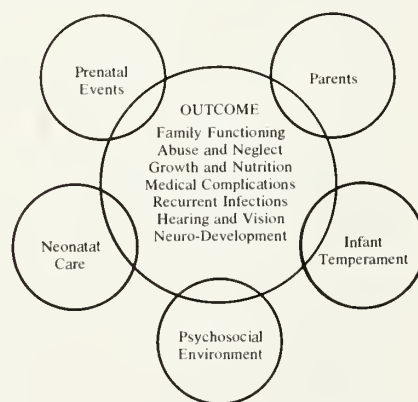


Figure 2. Complex continuum influencing infant outcome.

Dean's Page

MEDICINE AND MEDICAL EDUCATION

Arthur C. Christakos, M.D.
Associate Dean, Medical Education
Duke University School of Medicine

It is difficult to think about one's philosophy of medical education and about medicine in general without recalling those in the profession who may have had some influence on one's career choice. Such is the case with me. When I consider these topics, I naturally remember, among others, my former family physician who embodies those characteristics traditionally associated with the doctor — the *iatros*. Whether on a house call, in his office, or at the corner drugstore, he could be identified as *the doctor* by his demeanor, attire, mannerisms, and even by the faint aroma of tincture of iodine which lingered about him. The patient was the most important person in the world to this man, but his warm, sincere, and compassionate concern for the patient did not impair his professional objectivity and detachment so necessary in accomplishing his task. The epitome of discretion, he never betrayed a confidence. His enthusiasm for what he was doing was infectious, and he instilled a sense of encouragement and a positivity in his relationships with people, so that even in hopeless situations, despair was unlikely and dignity prevailed. In addition, it was obvious that his education had not ceased with graduation from medical school. He was constantly reading and improving his skills. He recognized his limitations and was unafraid to seek consultation. His omnipresence was legendary; his integrity, above question.

In the words of another country doctor, "This man had the three A's of being a good doctor — Ability, Affability, and Availability." In these contexts of ability, affability, and availability, I should like briefly to discuss students of medicine and their teachers rather than medicine and medical education.

Ability

It goes without saying that one must have a certain degree of intelligence to become a doctor. Certain other qualities in addition to intelligence are important in becoming and remaining an effective physician.



Arthur C. Christakos, M.D.

Most doctors have unusually well-developed powers of observation. Some seem to come by this naturally, while others make concerted efforts to develop and improve this faculty. Many advances in medicine have resulted from this ability in those intelligent enough to use it. Being alert and aware are characteristics of the good observer.

Medical teachers must have the ability to help their students improve their powers of observation while inculcating the principles of the scientific method in them. Accurate observations and documentation of facts by both teachers and students make for proper interpretation of data which is essential for problem solving.

Repetition breeds familiarity, and familiarity breeds learning. The ability of teachers to repeat in innovative ways to avoid boredom on the part of their students and the ability of the students to profit from repetition and to expand their understanding from it are important components of any educational process. As one of my mentors once said after being commended for successfully controlling retroperitoneal bleeding during pelvic surgery, "I've been there before!" Practice tends to make perfect.

We all recognize, however, that certain faculties are better developed in some people than in others. The ability of the teacher and the student to recognize those attributes during the medical school experience is helpful in channeling some people into pathology and others into pediatrics, gastroenterology, obstetrics, psychiatry, general surgery, etc.

The student who has a specific interest and who can identify a teacher who has expertise in that area would do well to associate with that mentor as much as possible. Much is learned through dialogue with those who know first hand about a subject. Herein lies one of the major strengths of the Duke curriculum. Many capable faculty are actively involved in the established procedures of their disciplines and are exploring the frontiers in those areas. Duke students have demonstrated their ability to profit from this over the years by associating directly with those faculty persons.

Affability

In addition to these various abilities, the successful student of medicine and his effective teacher share a secret which is found in their positive attitude. Those students and teachers who seem to be the happiest and most effective are those with enthusiasm for what they are doing. They are the ones who are motivated and have a sense of purpose. They are willing to sacrifice personal pleasures, to be altruistic, to care for those for whom they have professional responsibility, and at

the same time, they are able to maintain the balanced perspective necessary for their personal lives including spouses, children, families, friends, society, religion, etc.

Availability

The able and affable students of medicine and their teachers of the same ilk can be effective only if they are available. The teachers are obligated to make themselves available to their students, and the students are obligated to make themselves available to those situations that are most advantageous to learning throughout their lives. They are also obligated to

make themselves available to those people who have entrusted their health to them.

The students of the Duke University School of Medicine impress me as able, affable, and available candidates for the privilege and responsibility of caring for sick people.

The able, affable, and available physicians are the true spiritual descendants of the Greats of Medical History. They seem to maintain bonds with Aesculapius, Hippocrates, Galen, Hunter, Simmelweiss, Virchow, Osler, Best, Taylor, White, Minot, Strudwick, Nott, Cushing, Holmes, Sims, Williams, Davison, Reed, Hohman, Markee, Carter, Smith, Swett, Hart, Stead, Alyea, Baker. . . .

ALAIN RENE LESAGE [1668-1747]

Sir, said I, one evening, to Doctor Sangrado, I call Heaven to witness on the spot that I have never strayed from your infallible method; and yet I have never saved a patient: one would think they died out of spite. . . . My good lad, replied he, my experience nearly comes to the same point. It is but seldom I have the pleasure of curing my kind and partial friends. If I had less confidence in my principles, I should think my prescriptions had set their faces against the work they were intended to perform. If you will take a hint, sir, replied I, we had better vary our system. Let us give, by way of experiment, chemical preparations to our patients: the worst they can do is to tread in the steps of our pure dilutions and phlebotomizing evacuations. I would willingly give it a trial, rejoined he, if it were a matter of indifference, but I have published on the practice of bleeding and the use of drenches: would you have me cut the throat of my own fame as an author! O, you are in the right, resumed I; our enemies must not gain this triumph over us; they would say that you are out of conceit with your own systems, and would ruin your reputation for inconsistency. Perish the people, perish rather our nobility and clergy! But let us go in the old path. . . .

We went on working double tides, and did do much execution, that in less than six weeks we made as many widows and orphans as the siege of Troy.

The Adventures of Gil Blas de Santillana, Bk. II, Ch. 5 (tr. by Tobias Smollett)

Editorials

PROGRESS REPORT ON AMBULATORY SURGERY (NOW GREATER UTILIZATION, GREATER SAVINGS)

In the December 1980 issue of the NORTH CAROLINA MEDICAL JOURNAL, we reported on the status of ambulatory surgery in North Carolina and made the case for greater availability and utilization of this economical method of providing surgical treatment of good quality. To this end, Blue Cross and Blue Shield of North Carolina (BCBSNC) initiated a two-year effort to take this message across the state. A series of regional meetings were planned, co-hosted by selected hospitals in which those who are already providing ambulatory surgery in that region could encourage others to follow this lead. Because such types of activities are all too often not followed up, evaluated and reported, we are particularly pleased to be able to report some interim results of the BCBSNC efforts to you.

During 1980-81, one of us, (J.E.D.), led seven regional seminars co-sponsored by BCBSNC with hospitals in Brevard, Charlotte, Greensboro, Fayetteville, Raleigh, Hickory and Goldsboro. Representatives from 86 hospitals and eight freestanding ambulatory surgery facilities attended the meetings. Staff at BCBSNC surveyed ambulatory surgery resources in each region and worked individually with 55 hospitals and two freestanding units in providing information and guidance for extending and improving their services. During this two year period (1980-1981), 19 new hospital-based ambulatory surgery programs were established, adding to the 32 previously existing in the state. Five hospitals which already had operational programs are now building new expanded facilities. Another nine hospitals that currently lack a program are in the midst of construction which will accommodate new ambulatory surgery projects. Thus, the 28 programs started or adapted in this period represent almost a doubling of the number that were in operation in 1980.

Data on the use of such facilities are also encouraging. BCBSNC has been monitoring the use of ambulatory surgery for seven selected surgical procedures including D&Cs, excision of breast mass and adult circumcision. For each of three years prior to the launching of the BCBSNC program (1977-1979), 25 % of the seven surgical procedures were being performed on an ambulatory basis for their subscribers statewide. Latest figures for 1981 show an increase in this proportion to 34 % — a 36 % increase in the use of ambulatory surgery from the baseline period. The savings from avoided hospital charges due to this level

of ambulatory surgery for the seven procedures alone is estimated to be \$2,590,000. We are optimistic that an upward trend in use and savings will continue in light of the already established programs across the state that are in various phases of planning, construction, and beginning operation. The cooperative efforts manifest among our private sector groups in North Carolina has been the major factor contributing to the success of this movement.

Encouraged by the results thus far, BCBSNC is now engaging in a second phase of promoting ambulatory surgery. While the entire state was targeted in the first phase, to assist those who were clearly interested in developing ambulatory surgery, phase two is directed during 1982 toward 12 selected communities which are lagging behind the rest of North Carolina. Staff at BCBSNC are working closely with hospital administrators, physicians and employers in these communities to delineate the obstacles to ambulatory surgery and to facilitate the development of these programs. We plan to submit a future report of this newest effort.

JAMES E. DAVIS, M.D.
SANDRA B. GREENE, D.P.H.
CECIL G. SHEPS, M.D.

CLINICIANS AS SPORTS PHYSICIANS: SOME GUIDELINES

When a physician is asked to play the role of sports physician in his or her community, that physician is being asked, in essence, to fulfill a civic duty. My basic premise is that sports participation is good for persons of all ages, but that for a person not physically able, the risk of injury exceeds the value of that participation. This editorial is addressed to those of you who have been asked to so participate, but who hesitate because you are not sure 1) what will be expected of you, 2) how one goes about being a sports physician, and 3) how much time it will take.

What will be expected of you? As sports physician, you will be required to use your skill and judgment in three ways: for the preparticipation history and physical examination; during an athletic contest in which a participant sustains an injury; and during the injured participant's recovery and rehabilitation. You will need time to conduct preparticipation examinations and you will either need to be present at all athletic contests or be where you can quickly reach the playing field or gymnasium, and you will almost certainly be involved in an injured athlete's rehabilitation. Consideration of those three areas outlines your first and

third concerns — what will be expected of you and how much time will it take.

How does one go about being a sports physician? You should have no trouble carrying out your duties if you remember two things. First, you will be dealing primarily with little leaguers and junior high and high school students, occasionally with college and weekend athletes. Thus, the judgments and criteria for participation with which you will be concerned will differ from those for professional athletes. Secondly, your keyword should be “prevention.” Prevention of injury, prevention of reinjury, and, particularly, prevention of converting a small injury into a permanent disability.

The Preparticipation History and Physical Examination.

A standard athletic participation form provided by the State Department of Public Instruction is very helpful. The student or parents should complete the history section before you do the physical examination, but you should go over the history to be sure it is accurate and complete. You should re-evaluate in detail any medical problem described, and be sure that the form has been signed by the student and his or her parents.

As for the physical examination, the student's height and weight are more important than age, particularly in prepubertal students. Obesity is a pathologic state and a possible contraindication to athletic participation, especially because the risks of heat-related syndromes and of excess stress on the cardiovascular system are markedly increased in the obese person.

Previous injury, if rehabilitation has been adequate, should not be a contraindication to participation in a sport. You may also be the first to recognize scoliosis and other musculoskeletal abnormalities. Consequently, you may have to postpone the student's participation until appropriate consultation is obtained.

Certain medical conditions require further evaluation, medical clearances, and parental releases before you will be able to certify a student for athletic participation: acute infections, obvious growth disturbances, diabetes mellitus, jaundice, severe visual or auditory impairment, pulmonary insufficiency, organic heart disease or hypertension, enlarged liver or spleen, hernia, musculoskeletal deformity associated with functional loss, a history of convulsions or concussions, and absence of a paired organ, such as the kidney, eye or testicle. When these conditions cannot be treated adequately, you must deny the student clearance for participation in a sport that threatens well-being, and guide that student toward a sport that is safe.

The Acute Decision on the Sidelines

When you are called to treat a player injured during an athletic contest and to decide whether the player

can continue in the game, you most need to recall your guiding concerns: these are not professional players, and prevention is the goal. You cannot be a fan first and a sideline doctor second; you must be an objective physician first. The pressure exerted by the player, the team, the coach, and the fans to allow the player to return to the game may be intense, particularly if that injured player is the star. Above the din of persuasion, you must remember the player's future, not only for sports but also for the quality of existence for the rest of life. You must retain your objectivity, because in the heat of the contest, even the player's parents may well lose theirs.

Severe head or neck injuries, serious eye injuries, obvious fractures, and markedly unstable joints should not challenge your objectivity, because the player obviously cannot participate. It is the borderline injuries that will be your greatest problem: contusions, lacerations, abrasions, sprains, and strains. Here, you must do your best to make an accurate diagnosis and then to use your best judgment. If you have *any* doubt about the severity of the injury, your duty will be to keep the player out of the game until you can make an adequate assessment and a decision with which you are comfortable.

Rehabilitation

Adequate rehabilitation is defined as the return of the injured part to the preinjury level of strength, endurance, and agility. Your goal here will be to facilitate that improvement and the athlete's *safe* return to participation. Taking a broken limb as an example, it is not sufficient to put on a cast, allow time for healing, remove the cast, and let the player return to competition. The limb must be rehabilitated by appropriately controlled activity to full function.

Different injuries to different parts of the body heal at different rates, and all are influenced by the severity of the injury. Here, too, you must remain uninfluenced by coaches, parents, and others; the athlete must not be allowed to return to participation before *you* feel that he has regained strength, agility, and endurance. When full restoration of function and use is impossible, you must channel the player's interest to a sport in which he will be able to compete with less risk.

These sound like onerous duties but the word “*executing*” describes them better. And there are no words to describe the pleasure you will derive from those duties if you assume them. The guiding of young, healthy, developing bodies into healthy, intact, adult bodies should provide you with incredible satisfaction. When your community asks you to serve as sports physician, I hope you will do so.

GEORGE D. ROVERE, M.D.
Section of Orthopedic Surgery
Department of Surgery, and the
Sports Medicine Unit
Bowman Gray School of Medicine
Winston-Salem, N.C. 27103

From the Desk of the Managing Editor

As Others See Us:

A LAYMAN LOOKS AT THE WHITE COATS

A. Kenneth Pye

"The future of American medical education is, like all other higher developments, simply in the hands of the only aristocracy we strive for — the aristocracy of an enlightened public opinion."

—Fielding H. Garrison,
Introduction to the History of Medicine
(2nd ed.), Ch. 12

This quote could apply more generally to the profession of medicine. Duke University Chancellor A. Kenneth Pye's speech at this year's Medical Alumni Weekend is reprinted here as a stimulating treatise on the subject of public opinion — as others see us — and its importance to the future of medicine.

—AAH

No doubt many of you are disappointed that you ended up with a combination lawyer-academic bureaucrat like me instead of a distinguished scientist such as Phil Handler. I agreed to substitute for Phil in exchange for Bill's promise that I could speak to you on the subject, "A Layman looks at the White Coats." I did so because I have become deeply concerned that members of your profession, as well as members of mine, spend too much time talking to each other and not enough understanding how they are perceived by others.

I don't think I'm an unsympathetic observer of the medical scene. I readily concede that most physicians work harder and are brighter than most other persons in our society, including many academics and members of the other learned professions, and I am certain that they are no less dedicated to the common good. To quote Montaigne without subscribing to all of his views on the subject: "On the whole I honour the physicians; not in accordance with the precept because they are necessary. . . . but for love of themselves, having met many honest and likeable men among them. . . ."

Hence, my remarks today should not be considered those of a hostile critic but as reflections of concerns of a friend who thinks that the future is likely to be considerably different than our most recent past and is worried that the professions, and particularly medicine, may not appreciate the accelerated pace of change soon enough to accommodate themselves as well as might otherwise be possible.

All professions have a privileged status in American society, and the profession of medicine is more privileged than most. Special privileges are always vulnerable in a democratic society, but never more so than when the people become dissatisfied with a condition which they associate, rightly or wrongly, with those to whom special privileges have been granted. It may be of little consequence that the natural connection between the public concerns and the privilege of the profession is tenuous. Discontent with the conditions can trigger change in the name of reform that is far



Photo by Thad Sparks, Duke University

A. Kenneth Pye received his BA from the University of Buffalo and his law degrees from Georgetown University. He taught law and was associate dean at Georgetown from 1955 to 1966, when he became professor of law at Duke. Pye was dean of the Duke University School of Law 1968-70 and 1973-76, University counsel 1971-1973, and chancellor of Duke University 1970-73, and 1976 to the present. Pye plans to return to teaching at the end of this academic year.

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more sweeping than that required to meet the professed need.

My thesis this afternoon is that there is a real danger that the major changes likely to be imposed upon the medical profession will reflect serious public misconceptions about medicine and resentment over the special status enjoyed by physicians. The best way to avoid the risk of overkill is for the profession to (1) educate the public in the areas in which it suffers from significant misconceptions; (2) put its own house in order where there are justifiable reasons for public disquiet; and (3) use its influence to guide national health policy away from government control even if the result should be a more competitive system resulting in some pecuniary loss.

It seems to me that the dominant passion of our century is the movement toward equality. Arguably, the trend toward equality has been going on at least since the French Revolution. But certainly the dynamics of the movement have changed in kind rather than degree during our lifetime. The movement toward political equality, racial equality, sexual equality and economic equality is known to all of us. The whole notion of affirmative action that has been so much a part of our lives during the last decade can best be understood as a change from a desire for equality of opportunity to a desire for equality of result. Opportunity is no longer enough. The bottom line is equality in sharing the bounty of the good life. The egalitarian movement is not peculiar to our country nor confined to the domestic arena in any nation. During the remainder of this century, no force will be more significant in world affairs than the North-South debate, the strivings of the peoples of the southern hemisphere to share equally in material prosperity, health and long life with those of us who are fortunate enough to have been born white in the northern half of the globe. No profession can flourish except within the context of the society of which it is a part. The egalitarian movement, like other major movements within that society, inevitably will have a profound impact on the nature of the professions.

In the university we teach that a profession is characterized by an ideal of service, common standards and responsibility to a wider community. But in the real world after graduation, while we continue to define a profession in terms of its dedication to the public good, we soon adopt an elitist approach that recognizes the profession's right to determine what best serves the public good, and justifies its insistence upon self-regulation and freedom from external control, as a *sine qua non* for the assurance of quality which is essential for that public good. In every democratic society we must deal with what Jay Gold has described as the reconciliation of the professional principle which holds that decisions should be made by those who have significant knowledge about the subject, and the democratic principle which holds that decisions should be made by those whose interests will be affected significantly by the outcome. In an egalitarian age, the inherent tension between these

two principles tends to tilt in favor of power of the people and away from self-determination by those who claim specialized expertise by virtue of education and training and see no conflict of interest in actions that benefit both themselves and the public.

Who makes the decision of what is in the public interest and what measures best serve it has significant impact upon the nature of a profession. Under some circumstances a profession may be delegated broad authority by the public, a virtual monopoly of determining the kind of services it will provide and the price it will charge for its services, relatively free from real, as distinguished from theoretical, control over how it manages its affairs. In general, the learned professions have possessed this kind of power in America through most of this century, although the fact was not clearly understood by all. Such professional prerogatives can continue to exist, however, only when the public is reasonably happy with its access to services, the quality of the services, and the price of the services, and when it is generally unaware of alternatives that might produce the same or better results through the use of alternative, less costly means.

When a profession becomes dependent upon the public trough for its economic vitality, it must realistically face the additional requirement of achieving political results justifying its public subsidy. If a politician obtains more public approval for a vote to cut taxes than for maintaining Medicaid, then medical service to indigents is likely to be in trouble. In an era when egalitarianism is an important goal of a society, it is particularly difficult to persuade the public and politicians of the wisdom of self-determination by a profession on matters such as access, quality, price, and the exclusion of other providers when the profession is getting richer and the public is getting poorer. In such circumstances there is a tendency for the public to withdraw its delegation of the power of professional self-regulation and for government to impose its own requirements to achieve what the public, or the politicians, think are the right answers to hard questions.

If I'm right in these very broad generalizations, the issue becomes whether the public is happy with access, quality, price of medical services, and whether it is content to have them dispensed in the present manner. The polls still show a high level of satisfaction with health services, but I strongly suspect that during the coming years more people will become unhappy for myriad reasons and that the sum total of these disenchantments suggests a rocky road for physicians in the future.

What is likely to be the source of popular dissatisfaction? Human life has been extended. Diseases that have been the scourge of mankind have been eradicated. New technologies and new drugs permit the treatment of pain and illness more successfully than at any time in history. Inequalities in the availability of health care for the poor and aged have been markedly

reduced. There are more doctors and hospitals than ever. Why isn't the public happy?

I think we can start with pure avarice. There are churlish members of our society who simply object that doctors drive bigger cars and send their kids to better schools. Such emotions are sometimes fueled by observation of the manner in which physicians deal with others outside the profession. Dean Acheson once described lawyers as functioning with a realization of their "effortless superiority." It is exactly that attitude which is the source of much public bitterness about lawyers and doctors. Few critics of the genre stop to consider that many physicians are in their offices while they are reading a newspaper over coffee, and some physicians are still at work when the critic is sipping a martini before dinner. Jealousy may be at the bottom of these criticisms but unjustified perceptions may be as important as reality in the shaping of public attitudes.

Others may be swayed less by emotional resentment but nevertheless end up with a similar bottom line. They question why the compensation of physicians is so much greater in America than in many other countries in which physicians are well trained and presumably equally dedicated. These critics would concede that time spent in school by a doctor is much longer and the costs are greater, but would speedily point out that the difference in years and in dollars spent is not sufficient to explain the extent of the disparity. In particular, some critics wonder why the law of supply and demand does not seem to apply to physicians. When the number of doctors increases, so seemingly do the rates charged for professional services. The answer, in the minds of some critics, is that prices do not decline as supply increases because physicians have a monopoly and use monopolistic practices to keep prices high despite new physicians added to the community. The more pervasive explanation is the prevalence of insurance which insulates the consumer from direct cost and invites an expanded definition of medical necessity.

Critics also argue that physicians are subsidized to a greater degree and in greater amounts than most others in our society, yet are permitted independence from public accountability to a much greater degree than most. These critics point out that the cost of medical education is much higher than most or all programs of professional education, yet tuition charges are only marginally above those for other disciplines, if higher at all. The relatively low tuition, when compared to the high level of educational costs, reflects a clear subsidy, reaching its peak in the state universities where tuition is only a small fraction of the actual cost of educating a doctor. Thus, people who are being educated for an extremely lucrative profession not only do not pay the real costs of that education but are also not required to incur any greater loans than those who are being educated for service professions in which remuneration after graduation is likely to be much lower, such as nursing and public school teaching. The educational subsidy continues when

there is a surplus of doctors as well as when there is a shortage.

Subsidization continues in practice, according to critics, because the capital expenses of a physician are relatively low. They are low not because modern medicine is not a capital intensive venture but because capital costs for practicing the profession — such as hospitals and the technology found therein — are paid for either by the public or a non-profit institution, and the patient is charged directly for the use of capital assets, with the physician paying little or nothing for the use of the operating room or a CAT scanner which he requires for the practice of his special skills. Indeed, part of the high costs of hospital operations may be attributable to an understandable tendency to sacrifice hospital efficiency for the convenience of physicians who practice in them.

Not only is there a subsidization of expenses but there is also subsidization of income reflected in public programs of Medicare and Medicaid where there are direct public payments to members of a profession who are entrusted with the primary determination of what services the patient needs and how much to charge for these services. Less obvious but equally real is the indirect subsidization that results from the tax laws' exclusion from the taxable income of an employee of contributions paid for his medical insurance by his employer. We sometimes forget that this feature of the tax laws will reduce federal revenues by approximately \$21 billion next year while ensuring a broad demand for physicians' services.

A third form of subsidization is reflected in the income tax deduction made available to a taxpayer when his medical expenses exceed a small fraction of his adjusted gross income. The use of the services of a marriage counselor, a lawyer, an accountant or a plumber does not entitle the taxpayer to a deduction. The same amount paid to a psychiatrist does. In addition to concern about the monopoly practices of the profession and the levels of its direct and indirect subsidization, some critics are also concerned with advantages under the tax laws which physicians share with other professions but which are unavailable to the average citizen: the ability to significantly reduce taxes by making provision for a wide range of fringe benefits which are not taxable, such as dental insurance; the business deduction cost of journeys to spas for continuing education; a wide variety of tax shelters; and, in the case of academic physicians, the payment by a university of tuition benefits for their children.

There will be some, of course, who will reject these criticisms out of hand; others who may concede some validity to at least some of them but point out that these conditions have existed for some time and ask why they should cause any special consternation today when the profession has long enjoyed such special status. I think there are several answers to this reasonable question, and I will discuss a few: the acceleration of health costs; a change in governmental attitude toward the absorption of continually increas-

ing costs; renewed academic concern about the directions of our national health policy; and a failure of the profession to deal with some popular misconceptions about it.

Everyone is aware that health costs have been increasing, but even those of us who follow the subject closely are staggered by the dimensions of the problem. Expenditures for health in America rose 350 % between 1965 and 1978. Health expenditures increased from 5.3 % of the gross national product in 1960 to 9.4 % in 1980, and in the present decade we may be facing double digit increases as health costs continue to increase swiftly and the GNP increases at a lower rate than in the late 1960s and early 1970s. Private spending for health care by patients themselves and by private insurance companies has been growing at an even faster rate than public spending. Hospital expenditures are obviously the largest segment of the health industry but the second largest category of health expenditures is physician services, and these outlays have quadrupled from 1965 to 1978, increasing at an average annual rate of 11.6 %. From 1978, payments for physician services exceeded \$35 billion; it has been estimated that they grew to \$45 billion last year.

Cost increases of this magnitude would pose a problem if isolated from what else is going on in American society. They cause a particularly difficult situation when there is retrenchment everywhere else and medical expenses seem to be unchecked. It even seems likely that the problem will be only slightly affected by a recession because demand for medical services is virtually assured by insurance. The failure of regulatory attempts at cost containment, such as the efforts to limit capital expenditures of hospitals through hospital certificates of need, the efforts to curtail hospital costs through rate or revenue controls, and the effort to limit unnecessary procedures through PSROs, in fact may contribute to a public attitude that something drastic must be done with the "fat cats" in the health industry. Certainly, the problem is not helped by the medical profession's loud and persistent protestations of belief in the free enterprise system and its opposition to "handouts" while opposing any cuts in programs that benefit it. Few place credence in assertions that "voluntary cost containment" and medical school courses on how to cut costs are realistic solutions to our problems.

Unquestionably, the public concern will be accelerated if middle-class citizens are required to pay more of their own health costs directly, and if they perceive the degree to which they are already paying more than the real cost of the services provided them through low visibility transfers. When a hospital or a physician provides services to an indigent and does not receive reimbursement, the costs incurred are frequently transferred to a paying patient. Thus far, few paying patients realize that they are paying for their own services plus some share of services rendered to others. If third party insurance, the predominant method of payment of private costs, is altered to re-

quired co-payment or higher deductibles, or if the tax policy of the government is changed so that income tax is paid on health benefits supplied by employers in the same way as it is paid on ordinary income, or if the medical tax deduction is significantly limited, it is reasonable to assume that many middle-class citizens will display much greater concern about health costs than they have done in the past. Efforts to reduce those costs may not be aimed directly at physicians, but the incidental impact on them may be considerable.

The second major factor suggesting the need for concern with public dissatisfaction is the attitude of the government, which is paying a little over 40 % of the bills for medical services. It seems clear that the government wants to pay less and that it is seriously considering new ways to reduce costs. A significant number of thoughtful people in government believe that our present system embodies serious weaknesses that are contributing to the high costs and providing disincentives for cost saving. What the government is likely to do is, of course, anybody's guess. But it may well proceed in several directions that could have significant impact on the medical profession. The first is to remove what it regards as unwise tax subsidies for the purchase of private health insurance, or at least reduce tax subsidies by placing conditions upon the kind of private insurance plans that would qualify for favorable tax treatment. Such conditions might require that an employee have a choice of plans and give him an incentive for utilizing the least expensive ones. An employer might be required to provide a choice of health plans but obligated to make the same kind of contribution, regardless of which kind of plan the employee chooses. Some of these plans might provide lower employee contributions but involve co-payments or deductions, or policy limits. Insurance companies might be encouraged by government policy to offer different kinds of plans, including "preferred" provider coverage — that is, the utilization of certain physicians to perform services at rates lower than those now prevalent in the market. Simultaneously, the government may encourage competition by providing subsidies not through direct financing and reimbursement programs such as Medicare and Medicaid but by assisting public beneficiaries to purchase private insurance through devices such as voucher systems or providing an HMO option for Medicare reimbursement.

Where we will go is unclear, but the failure of present approaches to cost containment is clear. Few students of the process think costs can be controlled effectively in a system that combines government-subsidized health insurance in which the employee-patient has no incentive to reduce costs in meeting the health care needs of his family with a program of direct reimbursement to providers of care to the old and the poor without regard to whether adequate health care to these groups is available at lower costs from others.

The government may start by intensifying its efforts to increase price competition among providers. There

is clear concern that there have been noncompetitive practices imposed by physicians on each other and on innovative prepayment plans. Professional control over Blue Shield plans, restrictions on manpower utilization through practices such as hospital/staff privileges, specialty certification and restraints placed over non-physicians by physicians, concerted refusal to deal with insurance plans that adopt cost containment measures that are viewed by physicians as inappropriate, collective bargaining by medical organizations with third parties to approve or disapprove cost containment measures, and even such traditional concepts as reimbursement on the basis of a "usual, customary and reasonable fee" with peer review to determine when deviations are justifiable, may be subject to significant antitrust attack. In short, the government may be prepared to accept the advice of my colleague Clark Havighurst and change from direct command and control varieties of regulation to the enforcement of an open market and real price competition.

All these concepts may seem more appropriate for application to industrial organizations than to members of a learned profession, and until 1975 I think it is fair to say that most thought that the learned professions were exempt from the antitrust law, by the exercise of bureaucratic discretion if not by the language of the law. Recent cases now make it clear that the Sherman Act applies to the professions as to any other organization engaged in private commercial activities. Thus, even laudable attempts of organized medicine to form IPAs and to undertake other reforms may fall afoul of the antitrust laws simply because benign intent is no longer a defense for a practice that minimizes competition.

We cannot be certain that such events will transpire. There is talk of taking away the antitrust authority of the Federal Trade Commission. Deep concerns have been voiced that the removal of regulation may precede the appearances of competition for a number of years, with catastrophic effects. The courts may choose to limit the application of the antitrust laws if they perceive that there are real risks of impairing the quality of professional services available to the public. The *Maricopa County Medical Society* case now before the Supreme Court will surely provide some clues. Only time will tell.

A third factor suggesting greater public involvement in areas long considered to be the special realm of the profession involves scholarly approaches to the subject of health care that are questioning the heavy investment that the country has been putting in doctors and hospitals and asking whether less money might be better spent by changing directions. Two problems are particularly troubling to thoughtful observers. First is the argument advanced eloquently by Victor Fuchs that an increase in medical resources, given a reasonable quantity as a base, does not have much effect on health. It is argued that health is much more dependent on nonmedical factors than the quantity of medical care available. Economic growth, technological

change, income and education may be more important to improving overall health care than increasing the number of doctors, nurses and hospitals. These observers point out that while there are major improvements in health recorded in all the industrial nations between 1935 and 1955, and these improvements were extended to the less developed sections of the world shortly thereafter, the rate of improvement did not continue. While there are notable improvements in specific areas, such as the decrease in the number of deaths caused by heart disease, the health of the country does not show a direct relationship to the major influx of resources to health care providers during the last 15 years. Indeed, some of the most vocal critics argue that the present excess in hospital capacity, the so-called "glut" of physicians, the alleged increase in the number of unnecessary operations, and use of medical procedures primarily for "defense from malpractice," may be counterproductive. The evidence, they assert, does not support the conclusion that fewer physicians would really have a major impact on life expectancy or most other incidents of good health.

The most strident of these critics are what Paul Star has called "therapeutic nihilists." But one does not have to go as far as the most radical to suggest that there may be some merit in their concern. More people are asking the question of "what bang do you get for the buck" — public health measures, medical research targeted to disease prevention, or increasing the support for services to patients?

The second academic criticism is more egalitarian in its thrust. It points out that although the gap has been narrowed, even after more than a decade of Medicare and Medicaid, the disability for acute and chronic health conditions as measured by work-loss days, or restrictive activity days, or disabled days, varies significantly by social and economic criteria. The gap between low income people with poor schooling and the upper middle class has not been eradicated. Publicly subsidized private health insurance may greatly increase access to specialists in urban areas by the rich seeking relief from comparatively minor health complaints; it has done little to improve the health care of the poor or middle class in rural areas and slums.

A fourth factor contributing to a renewed public concerns is the failure of the profession to deal effectively with some basic misconceptions, many of which are not its fault. Alain Enthoven has provided a list of seven under the intriguing title, *What Medical Care Isn't*. The first misconception is that the patient is led to believe that the doctor should know what condition the patient has, be able to answer the patient's questions precisely, and prescribe the right treatment. If he doesn't, then the doctor must be guilty of incompetence or malpractice. Second, the patient has been led to believe that for each medical condition there is a "best treatment." It is then up to the doctor to know about that treatment and use it; anything else is unnecessary surgery, waste, fraud or underservice. Third, the patient is led to believe that medicine is an

exact science and that there is now a firm scientific basis for whatever the doctor does. In the fourth place, the public has been led to believe that medical care consists of standard products that can be described precisely in meaningful units such as "in-patient days," or "outpatient visits," or "doctor-office visits." In the fifth place, the public, educated in large part by television, has been led to believe that medical care is much more a matter of life and death, or serious pain, or disease than is the case. In the sixth place, the public has been led to believe that more medical care is necessarily better than less medical care. And finally, the public believes that most people have no control over the timing of their need for medical care; whatever is needed is needed immediately.

The profession has done little to free patients or the general public from these misconceptions. No group is in a better position to correct these views. The trouble is that several of these views have greatly benefited the income of the profession. Instead of setting the record straight, in general the profession has seemed happy to assert that health care cannot be rationed, although any thoughtful physician knows that any services in any society will be rationed inevitably by someone.

My thesis this afternoon is that we're now in a different ball game from any we have known before. Concerns over cost containment, particularly by the middle class; concern by the government that somehow, some way, it simply has to limit the rate of increase in health costs; concerns about whether good health is best achieved by more money being spent for doctors and hospitals rather than other alternatives; misconceptions about the nature of the practice of medicine suggest that the next decade will be challenging. Resentment over the special status enjoyed

by physicians poses a real danger to the profession as it now exists.

In the long run, no profession is strong enough to withstand a concerted movement by the government supported by the public aimed at controlling its services or structure. But the prestige, the power to persuade, the essential legitimacy of the professions have long been recognized in American life. They can best maintain their independence, maintain the right to control most of their activities, and incidentally maintain their preferred economic position, if they go to the people and disabuse them of their misconceptions and take the initiative to deal with real problems before other solutions are thrust upon them. What is needed of any profession is a willingness to alter its practices itself rather than have greater changes imposed upon it by others. A refusal to see the handwriting on the wall, an insistence on professional prerogatives, adopting a stone wall toward legitimate public concerns, in the long run can only result in greater restrictions upon the power of professional self-determination than would have occurred if the initiative had been seized. The task will not be easy. Changes that would have been applauded a decade ago may now be attacked under the antitrust laws. But American business has existed under these laws for three-quarters of a century and flourished. Creative lawyering, with cooperation by a profession that is prepared to change, should be able to achieve the same result.

I have spoken today of your profession, but much of what I have said is applicable to mine. Both lawyers and doctors still have time to forge creative solutions to the problems that confront us and the public we serve, but our time is growing short.

ERRATUM: The insert entitled "Campaign '82: The NC Primary Elections" in the July 1982 issue of the NORTH CAROLINA MEDICAL JOURNAL inadvertently listed only two of three physicians who are running for the General Assembly. John W. Varner, M.D., (D-House 37th District) will be on the ballot in November as will William T. Grimsley, M.D., (D-House 29th District) and Thomas D. Ghent, M.D., (R-Senate 22nd District). The *Journal* regrets this error.

Bulletin Board

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What? When? Where?

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In State

October 1

"Physician & Minister: A Team for Healing"

Place: Greenville

Fee: \$10

Credit: 3 hours

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

October 6-7

"22nd Annual Charlotte Postgraduate Seminar"

Place: Charlotte

Fee: None

Credit: 12 hours, AAFP

Info: Michael N. Leblang, M.D., Eastway Medical Clinic PA, 4101 Central Avenue, Charlotte, NC 28205, 704-537-0020

October 8

"Seminar in Medicine"

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450



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October 8-9

"Surgical Update for Non-Surgeons"

Place: Greenville

Fee: \$50

Credit: 6 hours, AMA Category I and AAFP

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

October 22-23

"Cancer and Nutrition: The 15th Annual Malignant Disease Symposium"

Place: Chapel Hill

Fee: \$125

Credit: 13 hours

Info: Mimi Minkoff, Cancer Research Center, Box 30, MacNider Building, Chapel Hill, NC 27514, 919-966-3036

October 27

"Calcium Antagonists: A New Era of Therapy for Cardiovascular Diseases"

Place: Greenville

Fee: \$50

Credit: 6 hours, AMA Category I and AAFP

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

November 10

"Developmental Disability in the Neonate and Infant: Causes and Rehabilitation"

Place: Greenville

Fee: \$25

Credit: 3 hours, Category I and AAFP

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

December 3-4

"Renal Dysfunctions and Hypertensive Disorders in Pregnancy"

Place: Greenville

Fee: \$50

Credit: 2 hours, (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

Out-of-State**October 4-8**

"International Symposium of Diagnostic Imaging"

Place: Bermuda

Fee: \$475

Credit: 25 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology — Box 3834, Duke University Medical Center, Durham, NC 27710

October 25-29

"Dermatology for Non-Dermatologists"

Place: Bermuda

Fee: \$325

Credit: 14 hours, AMA Category I and AAFP

Info: "Dermatology for Non-Dermatologists," PO Box 2987, Duke Medical Center, Durham, NC 27710, 919-684-2504

October 30-November 2

"76th Annual Scientific Assembly"

Place: Atlanta

Info: Southern Medical Association, PO Box 2446, Birmingham, Ala 35201, 205-323-4400

November 4-7

"Current Controversies in Adult and Pediatric Urology"

Place: Chicago

Credit: 33 hours

Info: Linda Mace, PO Box 3707, Duke Medical Center, Durham, 27710

November 12-14

"Cardiology in the Aging"

Place: Johnson City, Tenn.

Info: Floyd B. Goffin, M.D., Assistant Dean, Department of Continuing Medical Education, Box 19660A, Quillen Dishner College of Medicine, East Tennessee State University, Johnson City 37614, 615-928-6426

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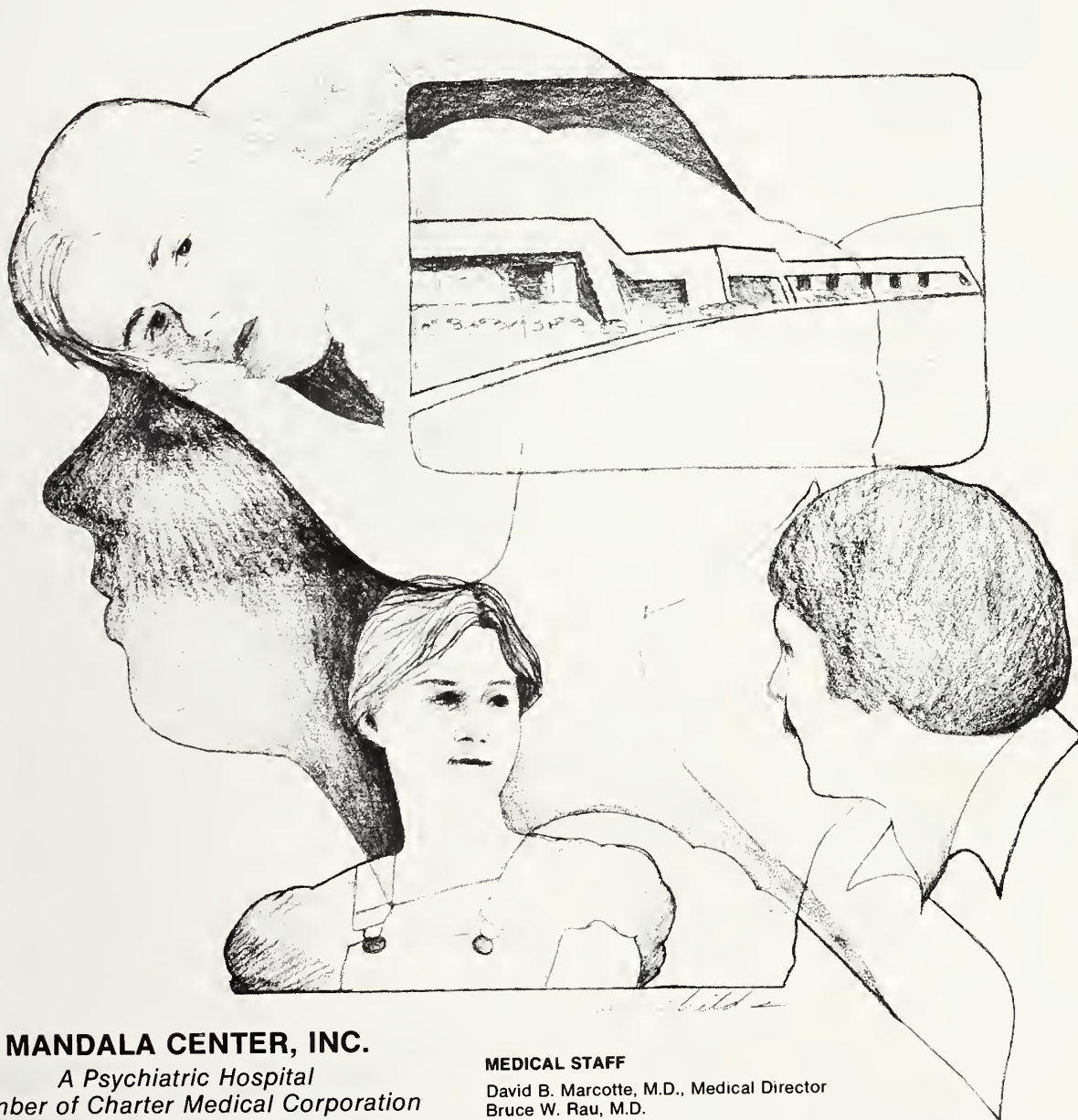
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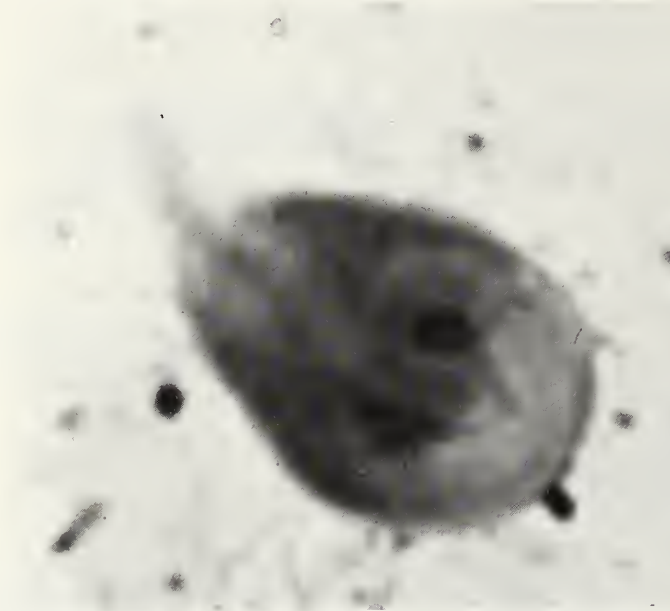
Those parasites that live primarily in the duodenum or bile ducts often are more readily seen in the duodenal contents than in the stool. These include *Giardia lamblia* (motile trophozoites), *Strongyloides stercoralis* (larvae and/or eggs in advanced stages of development), *Clonorchis sinensis* (eggs), *Fasciola hepatica* (eggs), *Trichostrongylus orientalis* (eggs), and *Isospora* (coccidia).

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December 6-10

"IV International Symposium in Perinatology,"

"III Course in Perinatal Medicine"

Place: Mexico

Info: Continuing Medical Education Unit, Montes Urales 800, Lomas Virreyes, Deleg. Miguel Hidalgo, 11000-Mexico, D.F.

The items listed in this column cover the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh 27611, two months prior to the month in which they are to appear.

North Carolina Medical Society Auxiliary

**PRESIDENTIAL ADDRESS
TO THE HOUSE OF DELEGATES
MAY 8, 1982**

I bet you thought that you were going to get a slide show! Last year my predecessor followed the maxim that one picture is worth a thousand words. She presented an excellent pictorial portrayal of the activities of the medical society auxiliary. I knew right then and there that I had been bested; so rather than expose myself to invidious comparisons in the show and tell department, my recourse is to attempt a picture show with words. The lights will stay on. . . .

This year has been a proud moment in my life. It is a heady experience to be chosen to lead 3,000 talented, creative, bright spouses of physicians. There have been occasions, however, when I have been humbled. And I want to talk to you about that. . . .

Dr. Joe Hooper tells the story of going back to his class reunion at Harvard. A classmate asked him, "Joe, what are you doing these days?"

Joe replied in his laconic fashion, "Well, I practice a little urology down in Wilmington, North Carolina. . . and I am chairman of the Republican Party."

His friend replied, "Joe, that's like being the biggest little midget in the world."

There have been occasions this year when I have felt like the second biggest little midget in the world. I've gotten all dolled up in my very best suit, and I have placed the magnificent golden pin of office on my shoulder and gone forth into the arena. I've sat down on the front row in anticipation of laudatory recognition. . . only to hear from the dais, "Let me introduce Miz Anne Hubbard, president of the 'ladies auxiliary.'"

There I sat suddenly feeling exactly like Aunt Bea in her apron, surrounded by her pickle jars and coconut cake.

If nothing else I say this morning is the least bit memorable. . . remember this one thing. Please do us a favor and erase forever from your minds the misnomer ladies' auxiliary. We moved this organization out of the kitchen and away from the tea table a long time ago.

We have no objection to being called ladies. Where it applies it is very fitting. But you see, some of our members are not ladies. They are men. Stop to think about it. Already at least a third of the medical students in this state are women. If we don't establish our rightful name in the hearts and minds of all who know us, we are due to self-destruct in a very few years.

That would be a terrible loss, because the medical society needs the medical auxiliary.

What is an auxiliary? Take a beautiful sail boat — full sail — cutting through the water. All of a sudden the wind dies. The boat drifts. There are three things which can be done: (1) Pray (2) Row (3) Turn on the auxiliary motor. Power is restored and you can go where you want to go no matter what the wind does.

Physicians get so involved physically and emotionally in the practice of medicine that there is little time or energy left over. Not many physicians can give full sail to work in organized medicine and to impact legislation to the extent which needs to be done.

The medical auxiliaries pick up the slack. They implement health projects in the communities and they are involved in every manner of health education.

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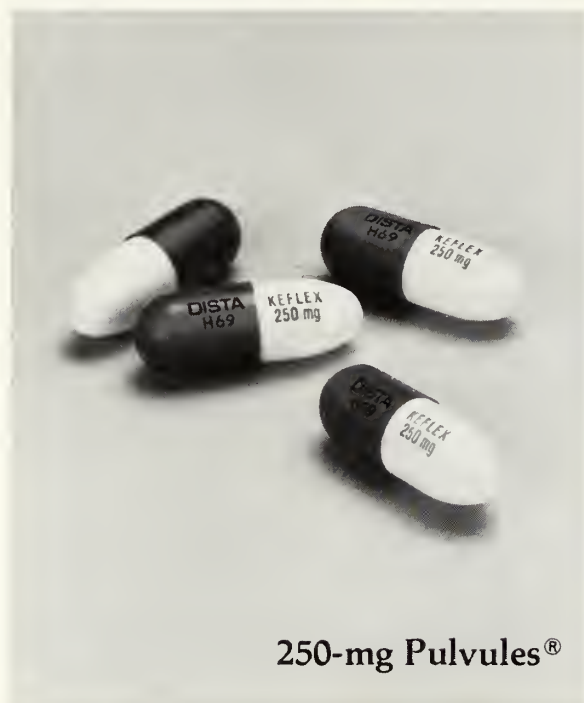
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They do public relations for the medical profession; they raise many dollars for scholarships and loans which are awarded to students of medicine and the allied health professions. They have a keen interest in medical legislation, and through their network they inform and they act when called upon to do so. Perhaps more than anything else they are a support group for physicians' families. Very few people not intimately involved with the medical profession really understand the various ramifications of being a part of the medical family.

During the 1981-1982 year, members of the medical society auxiliary alone have raised \$28,162 for AMA-ERF. This is a new high. This money primarily will be awarded to the four medical schools in North Carolina to be used at the discretion of the deans of those schools to benefit medical education in the state.

Also during this year, \$23,209 was raised and given in scholarships and loans to nursing students and other allied health professionals; \$6,625 was loaned to eight medical students from the state student loan fund — \$2,941.78 in interest from the state's mental health endowment fund which was established two decades ago for this purpose was given to the University of North Carolina Department of Psychiatry to use at its discretion to benefit the people of North Carolina in mental health. Hospices across the state received sev-

eral thousand dollars raised by the auxiliaries; money as well as time was spent to equip and to decorate pediatric wards and to fund meal programs, screening clinics, Red Cross, rescue squads, bloodmobiles, "Reach for Recovery" patients.

A particularly pertinent program in the state this year which has occupied the concern of volunteer organizations is the safe rider program. With all of our support last year, the General Assembly passed the Child Restraint Law. Every child under two must be properly restrained in an approved infant seat when riding in a car. We applaud this law, but we are aware that for the public it presents some difficulties. Expense alone is an overwhelming factor. A number of auxiliaries such as Scotland, Wayne, Burke, High Point and Buncombe have really become involved in their communities' infant seat loaner programs. They have provided money and education to the public and have volunteered hours. The Cadillac of these programs is in Buncombe County where the county auxiliary has joined with the health department. The auxiliary has donated 100 approved infant seats, and the governor's office has matched this donation with another 100. After ascertaining through a survey the extent of the need, Buncombe also gave a \$400 grant to cover the projected 40 families who would be unable to make the \$10 deposit for seats. In addition, the

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Crude Fiber %	2	1.6	5.3
Protein %	9.0	10.5	10.1
Fat %	3.2	3.0	2.5

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Less BREAD

auxiliary has set up a regular schedule of volunteer time to work at the distribution point in the health department three days a week.

Providing for the needs of infants has always been a special concern of medical auxiliaries. In another unique program, Forsyth has purchased 40 sturdy temporary beds — "lullaby cribs" — with mattresses which they have covered. These beds and mattresses were given to the Forsyth Memorial Hospital's Social Service Departments which in turn gives them to mothers of newborns who have no beds for their babies.

Perhaps you are wondering where all this funding is coming from. Some of you may be feeling for your wallets to make certain they are still there. The money used by the auxiliaries is raised by the members in any number of ways. Currently Mecklenburg County is selling tickets for two exercise concerts to be given in Charlotte by the extremely visible, popular, national physical fitness expert, Richard Simmons. The proceeds are to benefit the Charlotte Rehabilitation Hospital, entirely through the instigation of the medical auxiliary with the assistance of Belk's and WSOC-TV.

New Hanover has just published a beautiful cookbook: "A Cook's Tour of the Azalea Coast" — recipes, photographs, drawings, all originals. It involved the efforts of 130 of their 156 members. At the debut on April 7, they sold 1,200 copies. Some of the members were afraid there wouldn't be enough left to bring to the convention. Never fear. They are here, so be sure to get yours. The proceeds from this excellent effort, and we are not talking about chicken feed, assures the auxiliary ample funding for their health education projects.

Catawba County's annual fashion extravaganza in October made more money than ever before as did Alamance-Caswell's recent antique fair — \$7,000. Buncombe put on an elaborate spring frolic fashion and variety show which, despite competition with the ACC Tournament, yielded a handsome return in the thousands. Much smaller Nash made \$2,000 from a bridge benefit. All across the state, county auxiliaries have staged such things as arts in the park, marathons, garage sales, elegant rummage sales, silent auctions, holiday houses, bake sales, silver teas — and each one has had its own personal stamp. With these activities it looks as if the final total will reach the \$100,000 mark, and that in the year of a recession.

Every bit of this money goes back to the communities (none of it can lawfully go into our treasury) to help those in need — abused children, troubled teens, battered wives, prisoners, the elderly, the handicapped — as well as to provide programs and seminars which through education and prevention contribute to a healthier society. All three of our successful health museums are now on their own, but they still receive financial and volunteer support from the auxiliaries who gave birth to them — Buncombe, Mecklenburg, and New Hanover. And now another one is being launched in Rowan County. This is an effective and

exciting way to teach our young people about what makes them tick.

As you can see, money is not all that is given. Something which can be more precious than gold is time. This the members of the auxiliaries have given in abundance. They work in the schools. A sizeable group from the Greensboro auxiliary teach self-breast-examinations to ninth grade girls. Volunteers from Richmond County teach self-breast and testes examinations in the high schools. Wake, Wilson, Pitt and Henderson have participated in health fairs, and I feel that I should add that the chairman of the Wilson Health Fair was a male auxilian.

Henderson and Catawba gave complete baby sitting courses. CPR courses were sponsored by Mecklenburg, Wake and High Point. Avery and Alamance conducted blood pressure screening. Sampson County designed a community hypertension awareness week with blood pressure checks conducted at a different location in Clinton each day. In conjunction with this highly successful venture, which received enthusiastic response from the public, one of the local radio stations broadcast 30 second spots recorded by five different local medical specialists explaining the dangers of hypertension in their respective areas of expertise.

There are 38 radio stations in North Carolina which use the health tips taped by the county auxiliaries in their areas, and there are a couple of TV stations as well. Some of the spots include interviews of doctors. Some are done by the auxilians alone. The county legislation chairman from Greensboro encouraged her

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husband to volunteer as "doctor of the day" at the legislature last year. While he was thus occupied, she participated in a film showing medical care volunteered in the legislative building. It was aired on "Stateline" (Channel 4).

The auxiliaries have sponsored or have shared with their medical societies in a variety of seminars. Union County did a whole series dealing with the national auxiliary's emphasis on "shape up for life" — physical fitness, nutrition and management of stress. The seminar introduced by the state last May dealing with intergenerational relationships, "Generation in the Middle," was a great success, and as a result Lisa Gwyther from the Duke University Center on Aging was invited to five or six counties during the year to talk. She has made us all very knowledgeable about Alzheimer's disease. They have participated in seminars on medical marriage and the family and ones on finance. Since the passage of the Economic Recovery Act of 1981, estates, investments, trusts and wills as we all should know are a whole new ball game. One of the fruits of these seminars is that they have served to bring auxiliaries and medical societies closer together as they share in exploration of these areas.

On the state level there also has been an increased sharing. I am particularly grateful to President Newell for the way in which she has involved the auxiliary with the North Carolina Medical Society. We have participated in nine society committees. Where we may not have had a vote we certainly have had a voice. We have felt welcome and our opinions respected.

Out of our participation on the Physicians' Health and Effectiveness Committee a new state medical auxiliary project has emerged. It is "Helpline" — a confidential information line — and I stress the word information. It will be non-threatening to a physician's spouse who needs to know her options and appropriate action when there are problems with alcohol and drug abuse. We have observed that a wife will

suffer a long time rather than make a move which she perceives might threaten her security. This project fills a gap in the rehabilitation program.

I'm an enthusiastic mother when telling about the accomplishments of her chicks. We have only scratched the surface, but I have taken up enough of your time. Perhaps I should send each of you a copy of the annual report. Granted it isn't as spicy as the latest Harold Robbins novel, but it makes rewarding reading.

The medical society has given us generous support, but will you do one more thing for us? Now that you are aware of the breadth of our organization, please be our goodwill ambassadors. And that reminds me, I didn't mention our romantic side.

What I am referring to is our participation in the Southern Medical Auxiliary's programs — Doctors' Day and the Research and Romance of Medicine. We took two exhibits to the convention in New Orleans last November. Doctors' Day won two first place awards — best exhibit and best statewide observance. The Research and Romance of Medicine exhibit which featured Sampson County's recently published medical history, "Sketches: Sampson County M.D.'s 1736-1980" won three — best county exhibit of 75 members or less; best county exhibit and the Rouse Trophy for the best exhibit in the Research and Romance of Medicine category.

The way I figure it, during these past 12 months the state of North Carolina won the Battle of New Orleans twice.

Mrs. Hampton (Anne) Hubbard
Clinton, N.C.

News Notes

University of N.C. School of Medicine & N.C. Memorial Hospital

Researchers at the University of North Carolina at Chapel Hill have reported findings that certain cold- and flu-causing viruses triple the risk of developing middle ear infections, which afflict 75 % of all American children in the first years of life.

Controlling those viruses could prevent many of the infections, they said. Known as *otitis media with effusion*, the infections reduce children's ability to hear and can require surgery.

The researchers reported their findings — the results of a 14-year study — in the *New England Journal of Medicine*.

Dr. Frederick Henderson, assistant professor of pediatrics and a member of the study team, said that most research has concentrated on bacteria because they multiply in children's ears during bouts with middle ear infections. The UNC-CH study identifies kinds of viral infections that can help bacteria get started.

The study uncovered the importance of viruses by examining infants and toddlers regularly for 14 years.

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Medical data were collected from 83 children over the course of the study, conducted at the UNC-CH Frank Porter Graham Child Development Center.

Medical staff took nose and throat cultures every two weeks and performed physical examinations during the course of all illnesses. This approach revealed that viral infections often preceded middle ear infections within a two-week period.

Henderson said three kinds of evidence were found for the role of viruses. The team recovered viruses from nose and throat swabs from the children shortly before and during the ear infections. Epidemic outbreaks of ear infections matched epidemics of viral infections. And the children who had ear infections the most often were those who also had a history of infection with the three viruses identified as creating the greatest risk of ear infections.

Those viruses are: respiratory syncytial virus, influenza virus types A and B, and adenovirus. Peaks in the isolation of the respiratory and adenovirus infections were consistently associated with high rates of ear infection, Henderson said, and five other viruses were found to have some effect as well.

Bacterial infections in the nose and throat carried only half the risk of bringing on ear infections, he said, but the study produced some evidence that two bacteria commonly associated with ear infections might interact with some viruses to cause infection.

"Other studies have shown that some diseases are brought on by bacteria and viruses acting together,"

said Dr. Albert Collier, a member of the study team and director of health research at the Frank Porter Graham Center.

"This study supports the notion that many cases of ear infection are initiated by a virus, allowing bacteria to grow in the fluid that becomes trapped in the middle ear."

Henderson said that *otitis media with effusion* is the most common reason for doctors to prescribe antibiotics for children under four years of age. He said the incidence is highest among children in the second six months of life and that it tapers off after three years of age.

"It can be an expensive problem for parents," he said. In addition to doctors' visits and drugs, ear operations are recommended in many chronic cases to drain infectious fluid trapped in the middle ear. The operation, known as a myringotomy, costs up to \$900.

Because the infections reduce children's ability to hear, many pediatricians believe that repeated cases can delay language development, Henderson said. Some children have the infections almost constantly until their growing bodies develop the ability to clear ears naturally.

"Parents of young children should be alert to the possibility of infections when their children catch colds, which are usually caused by viruses," Henderson said.

"Further research into preventing viral infections in young children is warranted," he said. "Certain kinds



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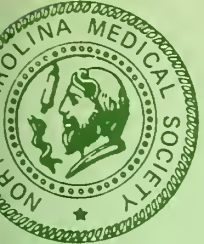
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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 4

SEPTEMBER 1982

Medicine's experience with burgeoning Federal regulation and intervention during the past few years has proven time and again that the Federal Government can be hazardous to your health. Medicine has always regulated itself and served the public more effectively than any bureaucratic group.

Sadly, the spectre of antitrust laws could thwart this healthy activity at a time when the public is demanding both quality care and cost containment. I believe that the high standards, great complexity, and precise judgements that characterize the medical profession set it apart from an ordinary commercial enterprise. External regulation of medicine through antitrust laws is destructive, if not impossible.

Unfortunately, Federal Trade Commission initiatives and recent U. S. Supreme Court opinions have continued the trend of applying commercial antitrust policies to the unique health care field.

The Federal Trade Commission continues to assert its jurisdiction over medicine and other professions. This lends greater importance to pending Congressional legislation which would limit the FTC's authority to regulate the learned professions.

On May 17, 1982, the Supreme Court ruled in the Mechanical Engineers case that a national professional association is subject to treble damage civil liability for the unauthorized acts of persons, if committed with "apparent authority". Then on June 18, the Maricopa County Medical Society decision was issued which found that maximum fee arrangements of fee-for-service medical care foundations was "price fixing" and an automatic violation of the antitrust laws -- even if it served to lower costs and increase competition. Ten days later, the Court conclusively determined in the Pireno case that peer fee review evaluations for insurers is not exempt from antitrust liability.

Until the application of the antitrust laws is properly tempered to the special needs of the health care industry, important efforts to promote quality health care and control costs will be disrupted and impaired. In the interim, we must avoid antitrust problems while we strive to meet today's challenges.

The major events of August occurred in Williamsburg, Va., and Boone, N.C. The Williamsburg meeting was a planning retreat for evaluation of your Medical Society's goals and directions. Excellent attendance and active participation made it very worthwhile. Your President came away with new enthusiasm for the future. You will hear more about that.

The Committee on Physicians' Health and Effectiveness held a workshop on "The Impaired Physician and Family" in Boone. It was hosted by Dr. and Mrs. J. David Stratton of Charlotte. The meeting cited effective intervention and treatment

programs and explored ways in which the medical profession could become more involved at the local level. The meeting stirred a major impetus to teach medical students about the problems of alcohol and drug abuse in medicine so that the students will be prepared to deal with this oft hidden problem. These activities will be specifically addressed in September when we seek greater physician involvement in this difficult area.

The French have an expression that translates into English as "The more things change, the more they remain the same." I'm struck by the aptness of that expression when I review the thoughts and speeches of past Society presidents. Problems and challenges may change, but the need to deal with them vigorously does not.

During his presidency in 1968-69, David G. Welton, M.D., sounded a note that is all too familiar: "Upon assuming this high office and great responsibility, one cannot avoid being staggered by the endless array of needs, problems, and propositions which confront the medical profession today. Recently, I attempted to make a list of them. After 30 minutes of writing, the list was not complete. Many of these matters are national in scope and have been thoroughly viewed and reviewed, cussed, and discussed, in multiple meetings and writings."

Dr. Welton cited expanding population, health deficiencies of the poor, the knowledge explosion, inflation, and urbanization as sources of difficulty. He also spoke of the need to set priorities and act on them.

The closing remarks of his inaugural address point strongly to a need that endures to this day. . . a need to join with the Society in advancing the cause of good medical policy and practice.

". . . in order to retain our freedom," Dr. Welton said, "we must work collectively. This is where your county society and your State Society have a golden opportunity to do more together and do it better. So I invite -- I urge -- every physician in North Carolina to join with us in working together -- as well as individually -- for the common good."

Dr. Welton's considerable contribution to the common good included completion of the arrangements for constructing our present headquarters building in Raleigh.

Please note that the correct dates for the North Carolina Pediatric Society Meeting to be held in Pinehurst are September 10-12, 1982. The dates were incorrectly listed in the June BULLETIN. We hope you will mark your calendar accordingly.

It's nice to be individualistic -- but, realistically, in today's world, there has to be some organized body to foster the legitimate interests of any profession. There are those who do not believe as we do, and they are working to restrict, regulate, and control us and the entire medical profession. Whether you join the North Carolina Medical Society out of professional responsibility -- whether you join out of curiosity -- whether you join out of anger at what exists -- whether you join out of the need for protection -- the issue of "joining" because you ARE or ARE NOT a "joiner" is really moot.

Sincerely yours,

M. S. Redding M.D.

Marshall S. Redding, M.D.
President

These reports bring you information on what the AMA is doing, on behalf of the profession and the public, to influence decisions that will affect health care in the next decade and beyond.

health
issues
of the
80's

competition

The word "competition" applied to the health care delivery system may be perceived as an anathema by some physicians who, in the past, have equated the concept of competition with high-pressure, wheeler-dealer business rivals. Or competition might have evoked thoughts of Olympic contestants, honorable orators, or chess champions. But the phrase, "competition in the medical care marketplace," until recently, was not often used.

Today, competition forms the cornerstone of some legislative and administrative proposals aimed at reducing health care utilization and, consequently, reducing costs. The premise, like many economic concepts, seems simple: if patients (the consumers) have greater participation in choosing from among several health care plans with different costs and different benefits, they will select appropriate plans and use services more prudently. Included in the premise is the idea that those connected with providing and financing care—physicians, hospitals, insurers and others—will compete to find the most cost-effective ways of providing that care. The extent to which actual behaviors will change to meet predictions is unknown.

The American Medical Association supports many of the principles of competition proposals — but we have grave concerns about some aspects of certain proposals.

About a year ago, the AMA House of Delegates adopted a report containing principles of evaluating competition legislation. The report named six basic desirable concepts: employers should offer multiple choice of plans; plans should provide at least certain minimum benefits; equal employer contributions, regardless of plan, should be required; nontaxable rebates to employees should be made when plans costing less than the amount of the employer contribution are selected; a maximum nontaxable contribution limit (adjustable for inflation) should be placed on the amount(s) of the premiums paid by an employer that are eligible for tax deductions as business expense; and unqualified plans should not be eligible for tax deduction.

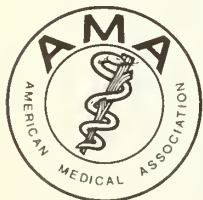
The foregoing concepts are basic to the competition proposals now being considered by Congress and the Administration. However, some legislative initiatives before the Congress also go far beyond these and could create an adverse effect on our health delivery system. The AMA opposes any legislation that would: (1) increase federal involvement in regulation of health care delivery; (2) merely replace existing programs of regulation with yet another set of expensive and complicated dictates; or (3) require undesirable restructuring of our health system. The AMA believes, also, that any new program should be introduced on a limited basis until it has been tested and proved effective.

While many economic theories appear reasonable on paper, human behavior does not always mirror theory. Results may not match expectations. Radical changes in health care delivery should be avoided, as should any proposals that would serve to ration or lower the quality of health care available to the American people.

The American Medical Association, reflecting the concern of its members, will continue to maintain a careful watch on legislative proposals affecting health care and support only those that show the promise of practicality.

Such leadership requires your support. The larger our membership (now nearly 240,000) the greater our influence, and our strength, as the only representative for all of medicine.

For details on how to join, contact your state or county medical society or the Division of Membership, American Medical Association, 535 North Dearborn, Chicago, Illinois 60610, (312) 751-6196.



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The Physician's Sleep Glossary

Some common sleep laboratory terms

poly·som·no·graph. An instrument which simultaneously records by electrodes physiological variables during sleep—for example, brain activity (EEG), eye movements (EOG), muscle tone (EMG) and other electrophysiological variables. These readings indicate precisely when patients fall asleep, how many wake periods they experience, the quality of sleep and the duration of sleep.

sleep la·ten·cy. The period of time measured from "lights out," or bedtime, to the commencement or onset of sleep.

wake time af·ter sleep on·set. Intervals of time spent awake between onset of sleep and the end of the sleep period. The polysomnograph registers the length and frequency of the intervals.

to·tal sleep time. The amount of time actually spent in sleeping. This is estimated by subtracting wake times from the period encompassed by the onset and the termination of sleep.¹

REM/NREM. 1. REM, or rapid eye movement, sleep is "active"—characterized by increased metabolic rates, elevated temperature and arousal-type EEG patterns. 2. NREM, or non-rapid eye movement, sleep represents "quiet" sleep stages. There are four distinct stages of NREM sleep.²

re·bound in·som·nia. A statistically significant worsening of sleep compared to baseline on the nights immediately following discontinuation of sleep medication.³

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Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, light-headedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

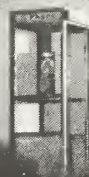
Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg recommended initially until response is determined.

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of colds have a greater impact, and these deserve to be singled out for more study."

More than 30 scientists and educators from throughout the country participated in a conference on "Teaching the New Biology" hosted by the School of Medicine at the University of North Carolina at Chapel Hill June 1-3.

The Conference focused on pre-clinical medical education, the period during which students are taught the basic sciences. It was organized by Dr. Charles P. Friedman and Ruth de Blik of the Office of Research and Development for Education in the Health Professions and Dr. John Perkins, Department of Pharmacology.

"The conference addressed how medical education can respond to changes in biological science by making use of recent developments in computers and cognitive psychology," Friedman explained. "The focus was on physicians who will be educated in the next 10 years and will be practicing well into the 21st century."

Participants in the conference developed recommendations concerning the rapidly expanding scientific basis of medical practice, appropriate instructional methods, the role of computers and the process of student evaluation. The continuity of medical edu-

cation from the pre-medical to the residency years also was discussed.

Formal proceedings of the conference, which was supported by the Josiah Macy Jr. Foundation, are expected to be published in early 1983. A presentation also will be made at the annual meeting of the Association of American Medical Colleges in November.

Participants from UNC-CH included: Dr. Stuart Bondurant, dean of the School of Medicine; Friedman, de Blik and Dr. Frank T. Stritter, Office of Research and Development for Education in the Health Professions; Dr. Marshall Edgell, Department of Bacteriology; Perkins, Department of Pharmacology; and Dr. William D. Mattern, Department of Medicine.

The Macy Foundation supports efforts in medical sciences, medical arts and medical education. The foundation convenes conferences on timely issues relating to these fields and has made grants totaling more than \$43 million since it was established in 1930.

The Robert Wood Johnson Foundation of Princeton, N.J., has awarded \$110,000 to the Health Services Research Center to continue the center's national evaluation of rural medical care programs.

Directed by Drs. Cecil G. Sheps and Edward H. Wagner, the study's goal is to identify the most effec-



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tive kinds of rural health care programs. The grant will enable Sheps, Wagner and their colleagues to analyze information gathered during the past three years.

"This is the largest and most comprehensive study that has ever been undertaken on this subject," Sheps said. "Its purpose is to determine the nature and amount of financial support required under different circumstances and the particular elements of organization and delivery that produce the best results."

The UNC-CH researchers are especially interested in learning what types of rural medical care programs provide the easiest access to services and are the most stable, he said.

They also plan to determine how reductions in federal support during the past year have affected the programs. Previous work on the four-year project has been supported by the Robert Wood Johnson Foundation and the U.S. Department of Health and Human Services.

Dr. David A. Ontjes has been named chairman of the Department of Medicine. His appointment, effective July 1, was announced by Dr. Christopher C. Fordham III, university chancellor, who also announced that Ontjes has been named Eunice Bernhard distinguished professor of medicine.

Ontjes has been a member of the School of Medicine faculty since 1969, when he was appointed assistant professor of medicine. He was promoted to associate professor in 1972 and became a full professor in 1976. He served as chief of the division of endocrinology and metabolism from 1972-81, and has been acting chairman for the past year.

A native of Kansas, Ontjes graduated with highest distinction from the University of Kansas in 1959. He attended Oxford University as a Rhodes Scholar, earning a master's degree there in 1961. He received his M.D. degree magna cum laude from the Harvard University Medical School in 1964, and completed his post-graduate training at the Harvard Medical Unit at Boston City Hospital.

Prior to coming to Chapel Hill, Ontjes served three years as a commissioned officer in the U.S. Public Health Service. During that time, he was a research associate in the Laboratory of Chemical Biology, National Institute of Arthritis and Metabolic Diseases in Bethesda, Md.

"Dr. Ontjes is a distinguished scholar, teacher and clinician, respected and admired by his colleagues, students and patients," said Dr. Stuart Bondurant, dean of the School of Medicine. "This school has benefitted greatly from his leadership in the division of endocrinology and metabolism, on a number of key administrative committees and, most recently, as acting chair of medicine. We look forward to the leadership he will provide in this new role in the years to come."

Edward J. Shahady, professor and chair, John Frey, associate professor, and Donald Cassata, as-

sociate professor of family medicine, attended the first International Forum on Family Medicine Education held in Puerto Rico. The International Committee of the Society of Teachers of Family Medicine (STFM) is chaired by Shahady. Frey and Cassata served as workshop moderators at the meeting.

Kenneth Sugioka, professor and chair of anesthesiology, chaired a session at the International Workshop on Blood Gas Measurement at the National Institutes of Health in Washington, D.C., June 14-17.

Richard V. Wolfenden, professor of biochemistry, presented the Syntex Lecture at the Canadian Institute of Chemistry in Toronto, June 1. The lecture was titled "Use of Transition State Analogs to Examine Changes in Enzymes and Substrates during Catalysis."

Clayton E. Wheeler Jr., professor and chair of the Department of Dermatology, was elected president of the American Dermatological Association at its annual meeting held in Hot Springs, Va.

East Carolina University School of Medicine

Ellis F. Hall Jr. has been named assistant dean at the School of Medicine. He formerly was departmental administrator for the Department of Family Medicine, a position he assumed in May 1981.

In his new position Hall directs the operations of the new ambulatory care center in the Brody Medical Science Building. The unit is expected to have 40,000 patient visits a year.

Prior to joining the medical school, Hall was executive officer for U.S. Army Medical Activity and Womack Army Community Hospital at Fort Bragg, N.C. He retired from that position as a colonel after a 38-year career in the army.

Hall has had extensive experience in health care administration in the United States, Europe, Africa, and the Middle East. His military assignments as health planner and administrator included positions with Walter Reed Army Medical Center and the Surgeon General's office in Washington, D.C., and with army installations in Florida, Kentucky, Alabama, Texas, the Philippines, Okinawa and Korea.

Hall received his undergraduate degree from the University of North Carolina-Chapel Hill and his master's degree from Syracuse University.

Dr. Dennis R. Sinar, associate professor of medicine, presented three papers during a meeting of the American Gastroenterologic Association in Chicago held May 16-18.

Sinar's papers were entitled "The Dissociation of Myoelectric Activity and Fluid Output in Ricin-Dam-

aged Small Intestine," "A Comparison of Small Intestinal Myoelectric Patterns with Salmonella and Shigella Diarrhea in Primates" and "Glucose Is the Major Component in Controlling Irregular Spike Activity After Feeding."

Also in May, Sinar presented two papers in Washington, D.C., at meetings of the American Federation of Clinical Research and the American Federation for Clinical Investigation. The papers are "Lidocaine Inhibition of Esophageal Peristalsis in Baboons" and "The Beneficial Effect of Methyl PGE₂ to Diminish Caustic Esophageal Injury."

In addition, Sinar is the co-author of "Verpamil — A Potent Inhibitor of Esophageal Function in the Baboon," a paper appearing in the May issue of *Gastroenterology*.

Three members of the Department of Family Medicine presented their research at the Family Medicine Conference Day in Chapel Hill on June 11.

Dr. David E. Burtner, assistant professor, and Dr. Dennis A. Revicki, research coordinator, presented "Self Monitoring of Blood Pressure: A Pilot Study." Dr. Harold J. May, director of behavioral science, and Revicki presented "Stress in Family Physicians: An Investigation of the Professional Burnout Syndrome."

Walter L. Shepherd has been named assistant dean at the School of Medicine.

Shepherd, who joined the school in 1975 as assistant to the dean, will assume senior administrative responsibilities for health services research and continue to serve as director of the Center for Health Services Research and Development, a position he has held since 1979.

In addition, he will continue to be administratively responsible for the medical school's Office of Information and Publications and Office of Health Education.

The center's staff conducts research on the health care system and the relationships between patients and health care professionals and develops strategies for improving health services. Shepherd has played an active role in the development of innovative health care delivery systems for the region and has provided both research and development assistance to many communities and organizations.

A native of Buffalo, N.Y., Shepherd was a member of the administrative staff at the Medical College of Virginia for six years before joining the medical school. His experience also includes being associate director of the Richmond Urban League and a community organizer with the Richmond Community Action Program.

He received his undergraduate and graduate degrees from ECU and is a lecturer in the university's sociology department.

Twenty-six college and high school students who plan careers in medicine or biomedical research par-

ticipated in two summer programs at the School of Medicine.

Sponsored by the Center for Student Opportunities, the annual programs are designed to prepare minority and disadvantaged students for admission to medical school and to encourage their interest in medical research.

Twenty-two of the students were enrolled in the Summer Program for Future Doctors, an eight-week session that introduces college students to the quality and quantity of work required in medical school. The program also encourages the students' interest in practicing primary care in rural areas.

Four Rose High School students from Greenville were enrolled in the Research Apprentice Program, another eight-week session that provides experience working in the laboratories of medical school faculty in the anatomy, microbiology and physiology departments.

The programs were funded by a \$23,000 grant from the National Fund for Medical Education and a \$4,500 grant from the National Institutes of Health.

Department of Pharmacology members Dr. Alphonse J. Ingenito, associate professor, and Dr. Mona M. McConnaughey, lecturer, are co-authors of a paper appearing in the May/June issue of the *Journal of Cardiovascular Pharmacology*. The paper is entitled "Clonidine's Central Hypotensive Effect: Route of Administration and Localization in Cat Brain."

McConnaughey also is a co-author with Dr. S. Gregory Iams, associate professor in the Department of Physiology. Their paper is entitled "Myocardial Adrenergic Receptors and Adenylate Cyclase in the Developing Rat" and appears in the May/June issue of *Clinical and Experimental Hypertension*.

Drs. Max C. Poole, assistant professor, and Tet-suya Kawabe, both members of the Department of Anatomy, attended the recent annual meeting of the American Diabetes Association and Endocrine Society held in San Francisco. Poole presented research on "Morphometric Studies of the Suppression of Gonadotropin Secretion by Hyperprolactinemia" during the meeting.

Dr. Allen F. Bowyer, professor of medicine, participated in the Ninth World Congress of Cardiology in Moscow in June. Bowyer led a session on general research that included presentations on heart function in Olympic athletes and Russian cosmonauts, and he presented the results of his research on the use of ergonovine maleate in diagnosing coronary artery disease.

His studies on the effects of massive weight reduction on heart function and the development of a computer program to predict a patient's risk and life expectancy following a heart attack were included in the conference's proceedings.

Bowyer also presented two papers in New Orleans in May at a conference on the application of Optical Instruments in Medicine. The papers were "Method to Analyze Left Ventricular Wall Motion Appropriate for Nuclear Echo and Angiographic Study" and "Three-Dimensional Computergraphic Presentation of the Coronary Arterial Tree."

Dr. James L. Mathis, professor and chairman of the Department of Psychiatric Medicine, discussed "An Experiment in Teaching Psychiatric Medicine" with the Association of Directors of Medical Student Education in Psychiatry on June 18 in Chicago.

Dr. S. Jamal Mustafa, associate professor, and Marica Hobbs, research technician, both members of the Department of Pharmacology, presented their research in a paper entitled "Effect of Ethanol Intoxication on Brian Adenosine Receptors" at the International Symposium on Adenosine held June 7-11 in Charlottesville, Va.

Mustafa also published a paper on "Demonstration of a Putative Adenosine Receptor in Rabbit Aorta." The paper appeared in the May/June issue of *Blood Vessels*.

Dr. Harold Kallman, professor of family medicine and chief of geriatric training, is a co-author of a paper appearing in the summer Journal of the New Jersey Medical Society. "A Health Knowledge Questionnaire Survey for Senior Citizens" is the title of Kallman's paper.

Dr. Seymour Bakerman, professor and chairman of the Department of Pathology and Laboratory Medicine, was a visiting professor May 21-22 at Walter Reed Army Medical Center in Washington, D.C. He presented a course on "The Study of Hormones."

A paper appearing in the March issue of *Toxicology and Applied Pharmacology* was co-authored by Dr. Donald W. Barnes, assistant professor of pharmacology. The paper is entitled "Toxicology of Trichloroethylene in the Mouse."

Dr. Charles H. Duckett, professor and director of graduate education in the Department of Family Medicine, has been elected to a three-year term on the N.C. Board of Medical Examiners.

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ACTIVE MEDICAL STAFF — December, 1981

Rolfe B. Finn, M.D.
William D. Keck, M.D.
Morgan E. Scott, M.D.
Don L. Weston, M.D.
Davis G. Garrett, M.D.
D. Wilfred Abse, M.D.
Hal G. Gillespie, M.D.
Basil E. Roebuck, M.D.
Orren LeRoyce Royal, M.D.



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Duke University Medical Center

Three Duke physicians were elected fellows in the American College of Physicians (ACP).

Drs. Warner M. Burch Jr., Edward W. Massey and Joseph O. Moore were named fellows and were honored at a convocation ceremony at the annual session of the organization in Philadelphia.

Burch, an assistant professor of medicine, graduated from the Bowman Gray School of Medicine in 1971, where he was a William Neal Reynolds Scholar in Medical Education. He completed his residency and a fellowship at Duke.

Massey is an assistant professor of neurology and assistant director of the medical center's rehabilitation unit. He received his medical degree from the University of Texas Medical Branch at Galveston, Texas, in 1970, and completed his neurology residency there in 1974.

Moore, who is an assistant professor of medicine in the division of hematology-oncology, received his degree from The Johns Hopkins University School of Medicine in 1970, where he also served his residency.

Forty-five interviewers will be questioning residents of Durham, Franklin, Granville, Vance or Warren County about their health through this December.

The interviewers and their questionnaires are part of a \$2 million Duke study on what kind of physical and mental illnesses people in the Piedmont area get and where they go for treatment. Duke and four other institutions are interviewing a total of 17,500 persons nationwide for the study, funded by the Public Health Service.

"The interviewers will question more than 4,000 people in five Piedmont counties," said Dr. Dan Blazer, one of the principal investigators for Duke. Blazer, associate professor of psychiatry and assistant professor of community and family medicine, is directing the year-long survey.

Linda George, associate professor of psychiatry and adjunct associate professor of sociology, is the co-principal investigator.

Blazer said information from the survey will be used to plan health care services for Piedmont communities. The Duke researchers hope to have all of their interviews completed by November, and the results ready for inclusion in the nationwide survey by December, 1983.

"I think we really know very little about what types of problems people suffer because individuals often don't seek help," Blazer said. "We need to know where people go to get help, and what some of the barriers to health care are."

A Duke pharmacologist has been named chairman of the National Academy of Science's Safe Drinking Water Committee. Dr. Daniel B. Menzel, a professor

of pharmacology and associate professor of experimental medicine, will serve a two-year term.

Menzel said the committee would concentrate its efforts on two major areas: studying the cancer-causing potential of arsenic and asbestos in the water supply; and relating the incidence of human disease to chemical hazards in the water.

The scientist is director of Duke's Laboratory of Environmental Toxicology and Pharmacology and also director of the Cancer and Toxicology and Chemical Carcinogenesis Program. His major research interests are in toxicology, pharmacology, and human nutrition. He is founding editor of the journal, *Toxicology Letters*, and has been a contributing author to several textbooks. He is a member of the Science Advisory Board of the U.S. Environmental Protection Agency, and has been an expert reviewer of criteria documents on water and air quality standards with that agency since 1978.

A Duke obstetrician and gynecologist, Dr. Leonard Laufe, is perfecting a sterilization method that combines an intra-uterine device and quinacrine, the drug used in World War II to treat malaria. He reported his latest research findings at a meeting of the Program for Applied Research in Fertility Regulation at Northwestern University in Evanston, Ill.

The physician said he is convinced that a non-surgical form of female sterilization is what's needed to help women in the areas of the world "where medical services are at a premium." Laufe said world health leaders estimate that approximately 180 million sterilizations are needed for the developing countries (excluding China) in the 1980s.

His method requires a one-time vaginal insertion, which can be done by paramedics. The drug attached to the IUD is released over four to 13 hours. The IUD works as a backup contraceptive. Laufe said the International Fertility Research Program (IFRP), in cooperation with The Johns Hopkins University, is conducting an extensive toxicology and teratology (congenital malformations) study of quinacrine.

About 12,000 people turned out at the Duke Children's Classic last spring to see such celebrities as Gerald and Betty Ford, Perry Como, Sam Snead, Connie Stevens and Buddy Hackett.

The two-day golf and tennis tournament raised an estimated \$175,000 to \$180,000 for the medical center's department of pediatrics. According to Classic director Jerry Neville, those figures break a record set at the event last year when \$166,000 was raised.

Dr. David C. Sabiston Jr., chairman of the medical center's department of surgery, has been made an honorary fellow of the Royal College of Surgeons of Edinburgh. The society, founded in 1505, is the oldest continuously functioning surgical certification society in the world.

Sabiston, who is a James B. Duke Professor of Surgery, was formally made an honorary fellow of the Royal College of Surgeons in ceremonies in Edinburgh, Scotland.

"Fellowship in the Royal College of Surgeons is the highest honor a surgeon can receive," said Dr. William G. Anlyan, vice president for health affairs. "No one is more deserving of this recognition than Dr. Sabiston."

The surgeon was recognized for his work in the field of clinical cardiac surgery and cardiovascular research. His textbook of surgery is printed in six languages. The Royal College also recognized the "significant impact" of Sabiston's surgical training program at Duke.

Sabiston received his bachelor's degree from the University of North Carolina at Chapel Hill in 1943. He received his medical degree from The Johns Hopkins University School of Medicine in 1947, where he was chief resident surgeon in 1952. He was a Fulbright Research Scholar at the University of Oxford, England.

An endowed professorship has been established at the medical center in honor of a long-time faculty member in obstetrics and gynecology, the late Dr. Walter L. Thomas.

Well-known for his work in gynecologic surgery and malignant diseases, Thomas wrote more than 40 scientific publications and was a member of 11 professional societies. He joined the Duke faculty in 1937 and rose to the rank of full professor and director of gynecologic oncology.

"Dr. Thomas epitomized the good physician and superb surgeon in this discipline," said Dr. Charles B. Hammond, chairman of the department of obstetrics and gynecology.

Thomas earned his medical degree from the University of Virginia in 1931 and came to Duke for three years of residency following an internship in Seattle, Wash. In 1935 he rejoined the Duke faculty. During World War II he served on active duty with Duke's 65th General Hospital Unit.

Dr. Merel Harmel, professor and chairman of the Department of Anesthesiology, retired Aug. 31. Harmel continues to teach, practice and write as a professor of anesthesiology.

A native of Ohio, Harmel received his bachelor and medical degree from Johns Hopkins, where he also had his first appointment as instructor in surgery (anesthesia). After serving at the University of Pennsylvania and Albany Medical College, he went to the SUNY-Downstate Medical Center as professor and chairman of anesthesiology in 1952. He assumed the same post at the Pritzker School of Medicine at the University of Chicago in 1968. He came to Duke as professor and chairman in 1971.

Two medical center researchers have been awarded a \$136,905 grant from the National Institutes of Health (NIH) to test the theory that people with diabetes can lower their blood sugar levels with relaxation exercises and behavioral training techniques.

"Scientists have known for a long time that stress can cause the blood sugar level to rise in a person with diabetes," said Dr. Mark N. Feingloss, an assistant professor of medicine in the division of endocrinology and an assistant clinical professor of psychiatry. "What we'll be doing in this experiment is teaching patients with diabetes how to affect their own blood sugar level."

The principal investigator, Dr. Richard Surwit said stress causes the body to produce hormones, such as adrenalin, which raise blood sugar levels in diabetic individuals.

Surwit said stress-related blood sugar level increases "are a major problem in the care of diabetes."

Feingloss and Surwit will use the grant, awarded by the National Institute of Arthritis, Metabolism and Digestive Diseases, to put 40 diabetic patients through an eight to ten day training and evaluation program on Duke's Clinical Research Unit.

Trials of a new monitoring device have been so successful that medical center researchers say the instrument may "dramatically reduce" the number of people who die or are left severely brain damaged following operating room mishaps.

The instrument, which has been used at the hospital since April 1 as a monitor on surgical patients under general anesthesia, has proved itself to be "capable of indicating within two or three seconds whether the amount of oxygen available to the patient's brain is sufficient," said Dr. Michael Mitnick, a physiology research associate.

Mitnick and Dr. Elisabeth Fox, an associate professor of anesthesiology, said the instrument, called a NIROS-SCOPE (Near Infra Red Oxygen Sufficiency Scope) is considered a "revolutionary development in operating room technology" because it continuously monitors the amount of oxygen available to the brain.

Fox said the NIROS-SCOPE is an "invaluable tool" for the anesthesiologist.

"It gives us, for the first time, a continuous, non-invasive way of directly monitoring the amount of oxygen available to the nerve cells in the brain for proper function and survival," she said.

The instrument, invented and developed by a Duke professor of physiology, Dr. Frans Jobsis, has been patented and licensed to the American Hospital Supply Corp.

Jobsis hopes to see the instrument commercially available in 1983 and widely used by hospitals within the next few years.

The physiologist said recent advances in near-infrared light sources and detectors coupled with recent advances in microelectronics and microcomputers "set the stage for development on a new instrument for clinical use."

Ralph Snyderman, professor of medicine and chief of the division of rheumatic and genetic diseases, received an \$84,591 research grant from the National Institute of Dental Research to study humoral and cellular mediators in inflammation.

Deborah E. Bender, assistant professor of community and family medicine and associate director of the Andean Rural Health Project, received a grant of approximately \$10,000 from the Southeastern Consortium for International Development. She will conduct a research and training program on infant and child health care with the residents of the Bolivian Alteilano this summer.

Theodore A. Slotkin, professor of pharmacology, received a research grant for \$66,987 from the National Institute of Child Health and Human Development for his study, "Drugs and Development of Adrenergic Nervous System."

Alfred P. Sanfilippo, assistant professor of pathology and surgery, received a research grant of \$46,579 from the National Eye Institute to study the mechanisms of corneal allograft rejection.

Joseph M. Corless, associate professor of anatomy and associate in the Department of Ophthalmology, received a research grant of \$112,920 from the National Eye Institute. His project is "Retinal Rod Photoreceptor Membrane Structure/Function."

Edward W. Holmes Jr., professor of medicine and assistant professor of biochemistry, received an \$86,145 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. His area of study is purine metabolism in gout.

John H. Casseday, associate medical research professor of surgery and associate professor of psychology, received a research grant from the National Institute of Neurological and Communicative Disorders and Stroke. Casseday's project is "Neural Mechanisms for Hearing."

Robert H. Jones, associate professor of surgery and assistant professor of radiology, received a \$38,559 research grant from the National Heart, Lung and Blood Institute for "Radionuclide Studies in Congenital Heart Disease."

William S. Lynn, professor of medicine and associate professor of biochemistry, received a \$64,694 research grant from the National Heart, Lung and Blood Institute. He is studying the structure, source and functions of alveolar glycoprotein.

Eugene D. Day, professor of microbiology and experimental surgery, received a \$63,065 research grant from the National Institute of Neurological and Communicative Disorders and Stroke to fund studies of glial cell membranes and myelin.

Madison S. Spach, professor and chief of the division of pediatric cardiology, received a research program project award of \$579,858 from the National Heart, Lung and Blood Institute for biophysical studies in pediatric cardiology.

Warren J. Kortz in the Department of Surgery received a \$2,500 grant from the Burroughs Wellcome

Fund to support his research in isolation, purification and transplantation of pancreatic islets.

A. Richard Whorton, assistant professor in the Department of Pharmacology, received a research career development award of \$38,750 from the National Heart, Lung and Blood Institute for study of renal and vascular prostaglandin synthesis and function. Whorton also received a \$34,368 research grant from the National Institute on Aging to study the effect of age on vascular arachidonic acid metabolism.

Kenneth A. Taylor, assistant medical research professor in anatomy, received a \$61,188 research grant from the National Institute of General Medical Sciences to fund electron microscope studies on muscle.

William W. Shingleton, professor and chairman of the division of general and thoracic surgery and director of the Comprehensive Cancer Center, received a \$1,165,164 support grant from the National Cancer Institute.

Allen D. Roses, professor of neurology, received a clinical research grant of \$25,000 from the Muscular Dystrophy Association to support a project, "Circulating Factors in the Pathogenesis of Myasthenia Gravis."

Erdman B. Palmore, professor of psychiatry and sociology, received a \$149,610 research grant from the National Institute of Mental Health. Palmore is studying "Mental Illness and Social Support Among the Very Old."

Harold P. Erickson, associate professor in the Department of Anatomy, received a \$48,004 research grant from the National Institute of General Medical Sciences. He is studying the immunoelectron microscopy of cytoskeletal filaments.

Robert Machemer, professor and chairman of the Department of Ophthalmology, received a grant of \$101,526 from the National Eye Institute for vitrectomy research.

Richard O. Burns, professor of microbiology, received a \$56,719 research grant from the National Institute of General and Medical Sciences to study molecular mechanisms of biological control.

The Bowman Gray School of Medicine Wake Forest University

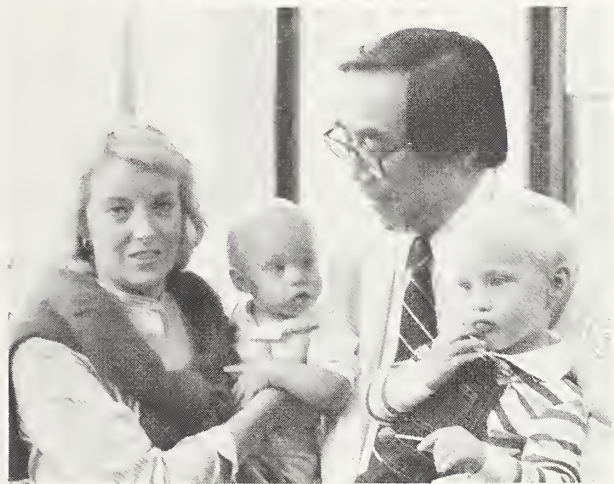
The Bowman Gray/Baptist Hospital Medical Center has completed its first year of offering a procedure intended to aid some patients with narrowing in one of the three coronary arteries.

The procedure, percutaneous transluminal coronary angioplasty (PTCA), has been used with eight patients and was successful in six.

PTCA involves guiding a deflated balloon less than one-sixteenth of an inch in diameter from a leg or arm artery into one of the coronary arteries. With the balloon in the artery, the balloon is repeatedly inflated with a liquid, compressing the material built up on the artery wall. If the procedure is successful, the opening

BECAUSE OF CHEMOTHERAPY KAREN ANDERSON IS A STATISTIC.

THE KIND OF STATISTIC WE LIKE TO BRAG ABOUT.




When Karen was only 18 years old, her doctor discovered she had a deadly form of leukemia. Facing incredible odds, a survival rate of only 3%, Karen spent the next three years in intensive chemotherapy.

Not only was her life at stake, but if she did survive, there were serious questions as to whether she'd be able to have children.

Now, eight years and two sons later, you'd never suspect that this vigorous young mother had battled a disease that kills more than 15,000 Americans every year.

Karen, Brian and Erik are living proof that we're gaining in the fight against cancer. It's a fight we can't afford to lose. It's your donations that help us continue the research, education and rehabilitation programs that will give us more statistics like Karen Anderson. The kind of statistics we can all be proud of.

**SHARE THE
COST OF LIVING**

Give to the American Cancer Society. 

within the artery is enlarged and blood flow to the heart muscle increases.

One measure of success for PTCA is if it increases the inside diameter of the artery by 20% or more. A long-term measure is whether the patient returns to a normal life, free from angina pains.

Dr. Michael A. Kutcher, the Bowman Gray cardiologist who performs the PTCAs, emphasizes that the PTCA process is a true team effort since it not only involves the active cooperation of his fellow cardiologists, but also the assistance of skilled technicians and the collaboration of cardiothoracic surgeons and anesthesiologists.

Though no such situation has arisen at the Winston-Salem medical center, world-wide statistics show there is a 5% to 7% chance during PTCA that a problem will occur which is severe enough to require emergency surgery. During a PTCA, an operating room and a surgical team is readied to handle such an emergency.

A second PTCA can be performed in those instances where an artery has narrowed again following an initial PTCA. But bypass surgery is recommended if narrowing recurs after a second PTCA.

Over a hundred of the world's authorities on reproductive immunology gathered at the Bowman Gray School of Medicine in June during the third annual international symposium on reproductive immunology. The previous two meetings had been held in New York City.

Reproductive immunology is a highly specialized part of the much larger field dealing with the body's ability to defend itself from outside threats such as bacteria and internal threats such as cancer.

It is not understood why the normal immune defense system does not recognize fetal tissue as foreign material and attack it. It also is not understood why the fetus' immune system does not recognize and react to the mother's tissue.

One of the participants in the June meeting, Dr. Halle Morton of Brisbane, Australia, discovered early pregnancy factor in 1974. The factor is released within hours of conception and has been found to be a powerful suppressor of the immune system. Dr. Morton explains that when a better means of detecting early pregnancy factor is found, medicine will have a much more rapid means of determining when pregnancy occurs. The factor may also play a role in infertility research and may help to explain why a fertilized egg is not attacked and rejected by the mother's immune system.

Dr. E. Ted Chandler, associate professor of medicine at Bowman Gray, has written a new book, entitled *How To Have Good Health*. The 188-page book, published by Broadman Press, explains how a person's Christian faith and a healthier body will lessen the chances of sickness and aid in healing.

In the book, he advises people that if they evaluate their lifestyles and recognize those parts of their lifestyles which are harmful over a long period, they can prevent many health problems and reverse some of their bad effects.

The book explains how to develop a healthier body through correct eating habits and proper exercises. It also tells how to avoid extremes and how to react to illness.

Dr. Elias G. Theros, the I. Meschan Distinguished Professor of Radiology at Bowman Gray, has been honored for teaching excellence by Bowman Gray's Department of Radiology.

He has received the James L. Quinn III Memorial Award, given annually by diagnostic radiology residents. The award was established in memory of Dr. Quinn, a Bowman Gray alumnus and former faculty member who was nationally known in the nuclear medicine field. He died of cancer in 1980.

Dr. Matthew D. Carson, chief resident in radiology, received the department's Radiology Faculty Award, given by faculty members to the resident who has demonstrated superior scholarship and potential as a diagnostic radiologist.

Also recognized for outstanding teaching was Dr. Alan Klein, assistant professor of radiology.

The Katherine Anderson Society of Bowman Gray's Physician Assistant Program is a co-recipient of the Public Education Award of the American Academy of Physician Assistants.

The student society at Bowman Gray and the George Washington University student group received the award during the 10th annual Physician Assistant Conference in Washington, D.C.

The annual award recognizes outstanding student society accomplishments in informing the public about the physician assistant profession.

One project of the Katherine Anderson Society was a scoliosis screening program in the Winston-Salem/Forsyth County public schools. Members of the society also presented programs in elementary schools to allay the fears children may have of going to the hospital or to see the doctor.

Dr. Robert C. Parker Jr. has been awarded the 1982 Osler Award, given by Bowman Gray's Department of Medicine to the internal medicine resident "who best exemplifies the ideal of patient care and scholarship" set by Sir William Osler.

Parker, a resident in medicine at the time of the award, has begun private practice in internal medicine at the Carle Clinic Association in Urbana, Ill.

The award consists of a plaque, a medical book of the recipient's choice and the inscription of the recipient's name on a permanent plaque at the medical

school. Recipients are chosen by their fellow residents.

Dr. Thomas B. Clarkson, professor and chairman of the Department of Comparative Medicine, has been appointed to a three-year term as a member of the Arteriosclerosis, Hypertension and Lipid Metabolism Advisory Committee of the National Heart, Lung and Blood Institute.

Dr. Robert W. Hamilton, associate professor of medicine (nephrology), has been appointed program chairman of the sixth annual North Carolina Chronic Renal Disease Symposium.

Dr. Joseph E. Johnson III, professor and chairman of the Department of Medicine, has been elected to a four-year term as North Carolina Governor of the American College of Surgeons. He also was appointed chairman of the Scientific Program Committee which plans national meetings of the College.

Dr. David L. Kelly, professor of surgery (neurosurgery) has been appointed chairman of the Future Meetings Sites Committee and chairman of the Honorary Membership Committee of the American Association of Neurological Surgeons.

Dr. Richard B. Marshall, professor of pathology, has been elected president of the North Carolina Society of Pathologists.

Dr. W. Frederick McGuirt, associate professor of

otolaryngology, has been named president of the Section of Otolaryngology and Maxillofacial Surgery of the North Carolina Medical Society.

Dr. Quentin N. Myrvik, professor of microbiology, has been appointed to the international advisory board for the *Encyclopedia of the Life Sciences*, a new publication being developed and published by the publishers of *Nature* magazine.

Dr. George D. Rovere, associate professor of orthopedic surgery, has been appointed editor of the Education Committee Course Manuals of the American Orthopedic Society for Sports Medicine. He also has been re-appointed chairman of the Medical Advisory Commission for Sports Medicine for the Superintendent of the North Carolina Department of Public Instruction.

Dr. James N. Thompson, associate professor of otolaryngology, has been named secretary of the Section of Otolaryngology and Maxillofacial Surgery of the North Carolina Medical Society.

Dr. John D. Tolmie, associate dean for student affairs, has been elected secretary-treasurer of the Southern Regional Group on Student Affairs of the Association of American Medical Colleges.

Dr. John R. Ureda, assistant professor of community medicine, has been elected to a third term as president of the Forsyth County Health Education Council.

THOMAS MANN [1875-1955]

Sympathy between doctor and patient is surely desirable, and a case might be made out for the view that only he who suffers can be the guide and healer of the suffering. And yet — can true spiritual mastery over a power be won by him who is counted among her slaves? Can he free others who himself is not free? The ailing physician remains a paradox to the average mind, a questionable phenomenon. May not his scientific knowledge tend to be clouded and confused by his own participation, rather than enriched and morally reinforced? He cannot face disease in clear-eyed hostility to her; he is a prejudiced party, his position is equivocal. With all due reserve it must be asked whether a man who himself belongs among the ailing can give himself to the cure or care of others as can a man who is himself entirely sound.

The Magic Mountain, Ch. IV, "Doubts and Considerations"
(tr. by H. T. Lowe-Porter)

In Memoriam

JAMES A. HARRILL, M.D.

James A. Harrill was born on November 7, 1909, in Mooresville, North Carolina. He was graduated from Wake Forest College in 1931; in addition to having a high academic standing, he found time to play on the first Wake Forest College golf team.

He entered the Wake Forest College medical program for two years, transferring then to the University of Pennsylvania, from which he received the M.D. degree in 1935. An internship and residency in otolaryngology were completed at Kings County Hospital in Brooklyn. He then returned to his native North Carolina to establish a private practice of otolaryngology in Winston-Salem. From that time until his death, Dr. Harrill's life was intertwined with the progress of medicine and medical education in the community, and on state and national levels. He was one of the original faculty members of Bowman Gray School of Medicine, and was the chairman of the Section on Otolaryngology from 1941 to 1978. He continued on the professional staff until his death early in 1982.

Over those years, Dr. Harrill was instrumental in the progressive growth of the medical school and served on a local, regional, and national level as a recognized and distinguished leader in otolaryngology. He served as president of the Forsyth County Medical Society, as president of the North Carolina Eye, Ear, Nose and Throat Association, and as president of the most prestigious otolaryngological society, the American Laryngological, Rhinological and Otolological Society. He served on numerous boards and executive committees within the specialty of otolaryngology, and contributed more than 30 articles to the publications of otolaryngology. The record of his residents success will be a lasting memorial in itself. None who trained under Dr. Harrill and took their specialty board examinations failed to pass.

Despite his academic accomplishments, Dr. Harrill will be most remembered by all who knew him for his gentlemanly, kind demeanor and his ability to find and take the time to communicate with all those with whom he came in contact, whatever their status or station in life. Whether his patients or those who worked with him professionally, whether his hunting and fishing friends or those who knew him through his hobby of stamp collecting, all who came in touch with Jimmy Harrill are better for the contact. He was a colleague, a mentor, and a friend to each of us in our varied relationships, and for each of us, along with Grace, his wife of 48 years, and his three children, Nancy, Betty, and Jim, his passing will leave a void in our lives.

**FORSYTH-STOKES-DAVIE
MEDICAL SOCIETY**

FRED GRANT PEGG, M.D.

Fred Grant Pegg was born October 5, 1907, near Guilford College, North Carolina. He was educated at High Point College and received his M.D. degree from the Medical College of Virginia in 1934. He was in private practice for two years, joining the Forsyth County and North Carolina Medical Societies in 1935. He received his master's degree in public health from the University of North Carolina in 1938 and was certified by the American Board of Preventive Medicine and Public Health. After special training in epidemiology at Johns Hopkins University, he returned to Winston-Salem as epidemiologist for the City Health Department then directed by Dr. R. L. Carlton.

He became acting health director in 1947, and when the city and Forsyth County health departments were consolidated he became the first permanent county health director in 1951. He was a champion for the cause of public health in the community and several times threatened to resign rather than tolerate budget cuts for his department. He resigned as director in 1963 to accept an appointment as the first director of the Forsyth County Mental Health Clinic, a position he held until retirement in 1972.

Dr. Pegg was a loyal member of the Forsyth County Medical Society and was its secretary-treasurer for 17 years, from 1958 to 1975, being ably assisted by his secretary and wife, Helen Craver Pegg. His service in this office began at a time when membership was less than 100, when 50 members at a meeting was a large attendance, and the program usually consisted of a scientific paper by a visiting physician. At the end of his tenure, membership was well over 200, attendance over 100, and the programs had changed to reflect the concerns of organized medicine about the effects of government programs, and economic and social changes on the practice of medicine.

Dr. Pegg died on January 27, 1982, at the age of 74.

**FORSYTH-STOKES-DAVIE
MEDICAL SOCIETY**

JOHN DERRICK WILSEY III, M.D.

Dr. John Derrick Wilsey, III, practiced the art and science of ophthalmology in Winston-Salem from 1944 until 1981 when he retired. He was born September 26, 1912, in New York City to James and Lucie Wilsey. He graduated from Princeton University in 1935, and from Johns Hopkins Medical School in 1941. He completed his graduate studies at the Illinois Eye and Ear Institute. For five years, 1964-1969, he served as chief of ophthalmology at Forsyth Memorial

Hospital and was an attending surgeon in his speciality at Medical Park Hospital.

He was a faithful member of St. Paul's Episcopal Church and served on the vestry. He was a member of the Lion's Club and served on the board of the Thompson Children's Home in Charlotte. He was a devoted husband and father and is survived by Lorraine, his wife, and two daughters, Jane Wilsey Tucker and Ann Wilsey deFrane, and seven grandchildren. His son, Dr. John D. Wilsey, IV, predeceased him by an untimely death early in his practice.

John Wilsey, beloved friend and esteemed colleague, died on January 7, 1982. His patients not only have given testimony about his gifts and talents in restoring sight and healing diseases of the eye, but loved him because of his gentleness, his caring, his devotion to them as persons, and above all his humility for the privilege of serving them. Despite a hip

replacement and physical suffering in the latter years of his practice, he was a patient, cheerful man.

When one looks at the whole of this man's life, one sees something more than a native New Yorker, graduate of Princeton and Johns Hopkins, an ophthalmologist transplanted to Winston-Salem; we see the spirit of this man. We see that he grew in the fulfillment of the two great commandments as recorded in Deuteronomy and in Mark's gospel. The first: "You shall love the Lord your God with all your heart, with all your soul, with all your mind, with all your strength." This is the second: "You shall love your neighbor as yourself." This was the measure of John Derrick Wilsey, III. "Only to do right and to love goodness, and to walk humbly with his God." (Micah 6:8)

Because of the stature of this man, we are a better profession; because of the spirit of this man we are a better community.

FORSYTH-STOKES-DAVIE
MEDICAL SOCIETY

THOMAS GALE [1507?-1586]

The Chirurgian must also in theis his operations observe five thynges principally. First, that he doeth it safelye, and that wythout hurte and damage to the pacient. Secondly that he do not detracte tyme or let slepe good occasions offered in workyng, but with suche spede as arte wyll soffer, let hym finishe his cure. Therdly, that he work jently, courtyously, and with so lytle payne the pacient, as conveniently you may, and not roughly, butcherly, rudlye, and wythoute a comblenes. Forthly, that he be as free from crafte and decyte in all his workynges as the East is from the Weaste. Fiftly that he taketh no cure in the hande for lucre or gaynes sake only, but rather for an honest and competent rewarde, with a godly affection, to doe his diligence. Laste of all, that he maketh no warrantysse of suche sicknes, as are incurable, as to cure a Cancer or ulcerate, or elephantiasis confirmed; but circumspectlye to consider what the effects is, and promyse no more then arte can performe.

Certain Works of Chirurgie, "A Institution of a Chirurgian"

In Appreciation

RESOLUTION OF APPRECIATION ADOPTED IN HONOR OF F. M. SIMMONS PATTERSON, M.D. MAY 25, 1982

WHEREAS, Dr. F. M. Simmons Patterson recently retired from his responsibilities for the continuing medical education programs of the East Carolina University School of Medicine and Pitt County Memorial Hospital; and

WHEREAS, he fulfilled with great success his pioneer roles as Director of Medical Education of the Hospital, Assistant Dean for Continuing Medical Education of the School of Medicine and Executive Director of the Eastern Area Health Education Center; and

WHEREAS, his singular achievements in the development of a truly outstanding continuing medical education program for the Medical Staff of Pitt County Memorial Hospital have greatly enriched the professional lives of the Medical Staff and encouraged the life-long learning traits of its members; and

WHEREAS, Dr. Patterson's exemplary medical

career in North Carolina as a practicing surgeon, as head of the North Carolina Regional Medical Program, and as a member of the faculty and Director of the Cancer Control Program at the Duke University Medical Center prior to his joining us in 1975 has been widely recognized and acclaimed across the state; and

WHEREAS, numerous honors and awards have been bestowed upon him including Fellowship in the American College of Surgeons, Distinguished Alumnus Award of the University of North Carolina-Chapel Hill School of Medicine and, most recently, Emeritus Professor of Surgery of the East Carolina University School of Medicine; and

WHEREAS, he commands the respect and love of all who know him and quietly demonstrates those attributes and qualities that characterize the Compleat Physician;

NOW, THEREFORE, BE IT RESOLVED that The Medical Staff of Pitt County Memorial Hospital expresses its deep appreciation to Dr. F. M. Simmons Patterson for his dedicated service and leadership and its warmest best wishes for his future well-being and happiness.

PITT COUNTY MEMORIAL HOSPITAL, INC.

PARACELSUS [1493?-1541]

These are the qualifications of a good surgeon:
Regarding his innate temper:
A clear conscience,
Desire to learn and to gather experience,
A gentle heart and a cheerful spirit,
Moral manner of life and sobriety in all things,
Greater interest in being useful to his patient than to himself,
He must not be married to a bigot. . . .
He should not be a runaway monk,
He should not practise self-abuse,
He must not have a red beard,
He must not act without judgment,
He must not accept belief without understanding,
He must scorn the workings of chance,
He must not boast of knowing anything without experience,
He must never boast or praise himself
He must despise no one.

Notes for the "Antimedious"

l(tr. by Norbert Guterman in *Selected Writings*)

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quately treated with B₁₂.

Precautions: *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

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References: 1. Shaw S, Lieber CS: Nutrition and alcoholism, chap. 40, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME. Philadelphia, Lea & Febiger, 1980, pp. 1220, 1237. 2. Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, op. cit., p. 781. 3. Shils ME, Randall IIT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, op. cit., pp. 1084, 1089, 1114. 4. Dixon RE: *Ann Intern Med* 89 (Part 2): 749-753, Nov 1978. 5. Committee on Dietary Allowances, National Research Council: Recommended Dietary Allowances, ed 9. Washington, National Academy of Sciences, 1980, p. 13.

minerals, but generally at levels substantially higher than those in Berocca Plus. However, allergic and idiosyncratic reactions are possible at lower levels. Iron, even at the usual recommended levels, has been associated with gastrointestinal intolerance in some patients.

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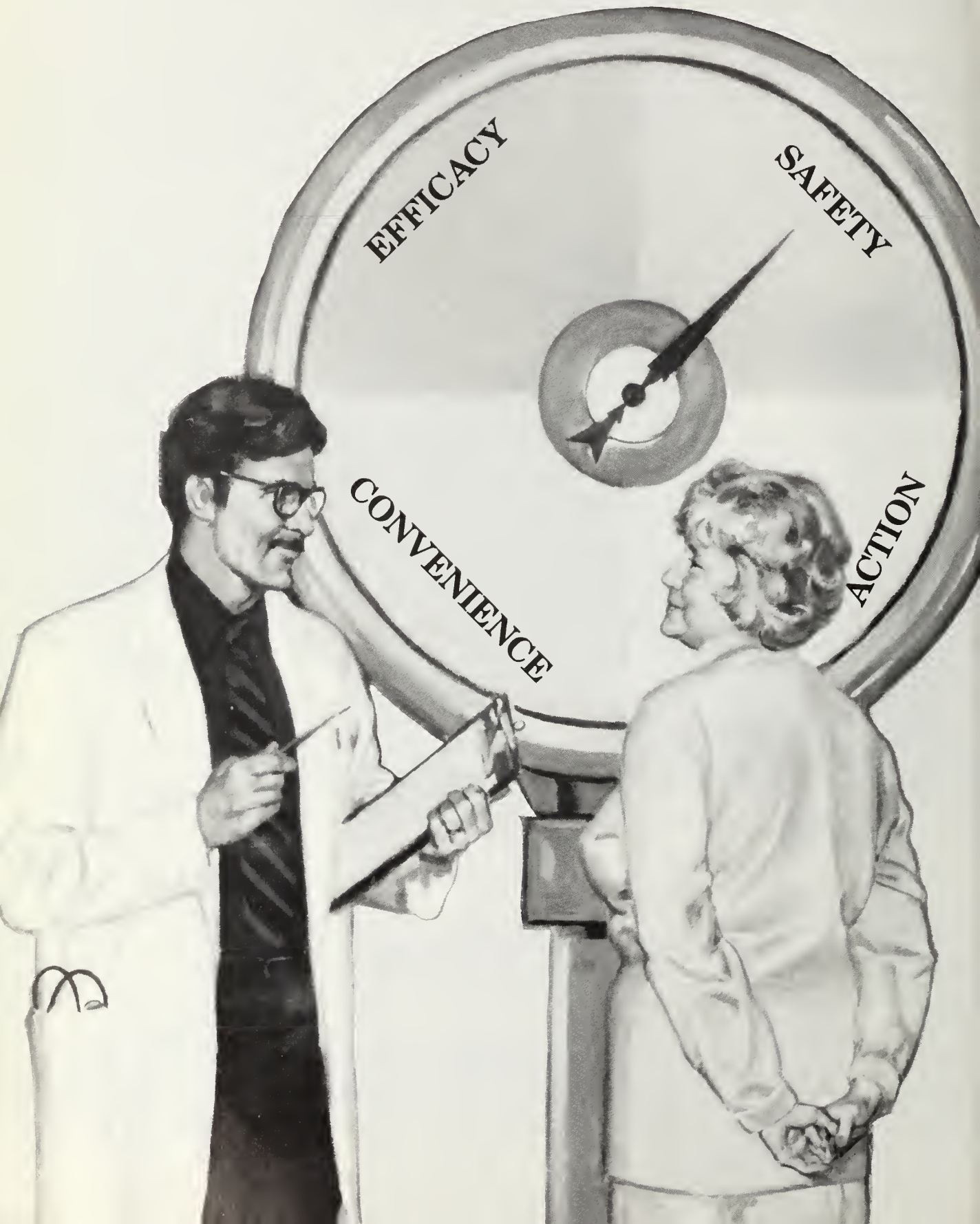
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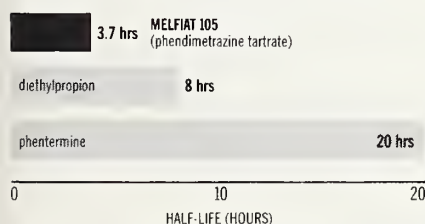
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References: 1. Sheu YS, Ferguson JA, Cooper JR: *Evaluation of the Abuse Liability of Diethylpropion, Phendimetrazine, and Phentermine*, unclassified document ADAMHA, HHS, Office of Medical and Professional Affairs, NIDA, 1980.
2. Douglas JG, Munro JF: The role of drugs in the treatment of obesity, *Drugs* 21:362-373, 1981.

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INDICATIONS AND USAGE: Melfiat® 105 (phendimetrazine tartrate) is indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class (See CLINICAL PHARMACOLOGY) should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, symptomatic cardiovascular disease, moderate to severe hypertension, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors (hypertensive crises may result).

WARNINGS: Tolerance to the anorectic effect usually develops within a few weeks. When this occurs, the recommended dose should be discontinued. Phendimetrazine tartrate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly.

Drug Dependence: Phendimetrazine tartrate is related chemically and pharmacologically to the amphetamines. Amphetamines and related stimulant drugs have been extensively abused, and the possibility of abuse of phendimetrazine tartrate should be kept in mind when evaluating the desirability of including a drug as part of a weight-reduction program. Abuse of amphetamines and related drugs may be associated with intense psychological dependence and severe social dysfunction. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high-dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG, manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxication is psychosis, often clinically indistinguishable from schizophrenia.

USAGE IN PREGNANCY: The safety of phendimetrazine tartrate in pregnancy and lactation has not been established. Therefore, phendimetrazine tartrate should not be taken by women who are or may become pregnant.

USAGE IN CHILDREN: Phendimetrazine tartrate is not recommended for use in children under 12 years of age.

PRECAUTION: Caution is to be exercised in prescribing phendimetrazine tartrate for patients with even mild hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of phendimetrazine tartrate and the concomitant dietary regimen. Phendimetrazine tartrate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose.

ADVERSE REACTIONS: Cardiovascular: Palpitation, tachycardia, elevation of blood pressure.

Central Nervous System: Overstimulation, restlessness, dizziness, insomnia, euphoria, dysphoria, tremor, headache; rarely psychotic episodes at recommended doses.

Gastrointestinal: Dryness of the mouth, unpleasant taste, diarrhea, constipation, other gastrointestinal disturbances.

Allergic: Urticaria.

Endocrine: Impotence, changes in libido.

OVERDOSEAGE: Manifestations of acute overdose with phendimetrazine tartrate include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states.

Fatigue and depression usually follow the central stimulation.

Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Fatal poisoning usually terminates in convulsions and coma. Management of acute phendimetrazine tartrate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Acidification of the urine increases phendimetrazine tartrate excretion. Intravenous phentolamine (Regitine) has been suggested for possible acute, severe hypertension, if this complicates phendimetrazine tartrate overdose.

DOSAGE AND ADMINISTRATION: Since Melfiat® 105 (phendimetrazine tartrate) 105 mg is a sustained-release dosage form, limit to one sustained-release capsule in the morning. Melfiat® 105 (phendimetrazine tartrate) is not recommended for use in children under 12 years of age.

HOW SUPPLIED: Each orange and clear sustained-release capsule contains 105 mg phendimetrazine tartrate in bottles of 100.

CAUTION: Federal law prohibits dispensing without prescription.



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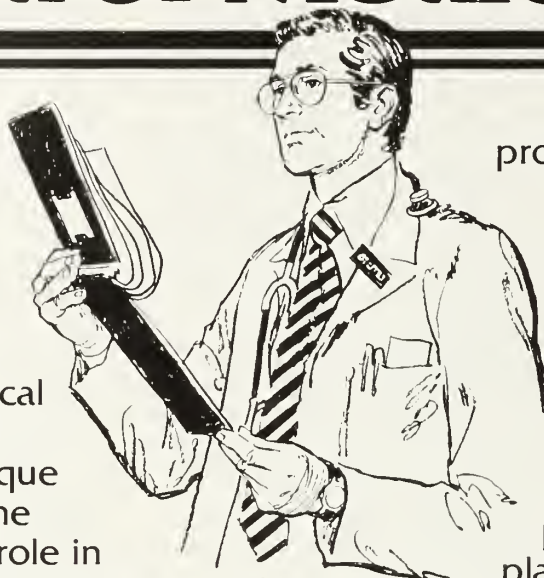
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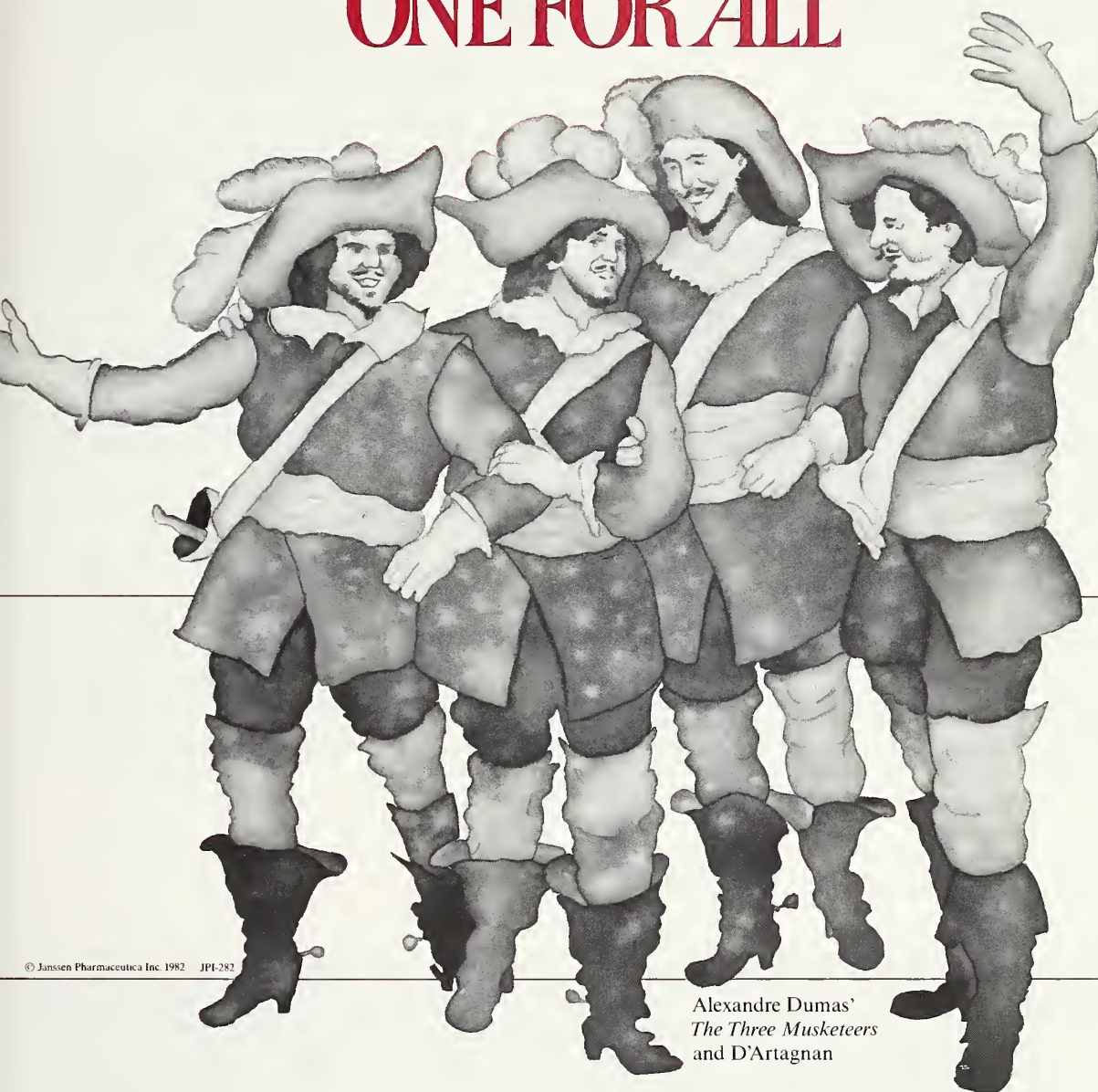
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DESCRIPTION VERMOX (mebendazole) is methyl 5-benzoylbenzimidazole-2-carbamate.

ACTIONS VERMOX exerts its anthelmintic effect by blocking glucose uptake by the susceptible helminths, thereby depleting the energy level until it becomes inadequate for survival. In man, approximately 2% of administered mebendazole is excreted in urine as unchanged drug or a primary metabolite. Following administration of 100 mg of mebendazole twice daily for three consecutive days, plasma levels of mebendazole and its primary metabolite, the 2-amine, never exceeded 0.03 µg/ml and 0.09 µg/ml, respectively.

INDICATIONS VERMOX is indicated for the treatment of *Trichuris trichiura* (whipworm), *Enterobius vermicularis* (pinworm), *Ascaris lumbricoides* (common roundworm), *Ancylostoma duodenale* (common hookworm), *Necator americanus* (American hookworm) in single or mixed infections. Efficacy varies as a function of such factors as pre-existing diarrhea and gastrointestinal transit time, degree of infection and helminth strains. Efficacy rates derived from various studies are shown in the table below:

	Whipworm	Common Roundworm	Hookworm	Pinworm
cure rates				
mean	68%	98%	96%	95%
(range)	(61-75%)	(91-100%)	—	(90-100%)
egg reduction				
mean	93%	99.7%	99.9%	—
(range)	(70-99%)	(99.5%-100%)	—	—

CONTRAINDICATIONS VERMOX is contraindicated in pregnant women (see Pregnancy Precautions) and in persons who have shown hypersensitivity to the drug.

PRECAUTIONS **PREGNANCY:** VERMOX has shown embryotoxic and teratogenic activity in pregnant rats at single oral doses as low as 10 mg/kg. Since VERMOX may have a risk of producing fetal damage if administered during pregnancy, it is contraindicated in pregnant women.

PEDIATRIC USE: The drug has not been extensively studied in children under two years; therefore, in the treatment of children under two years the relative benefit/risk should be considered.

ADVERSE REACTIONS Transient symptoms of abdominal pain and diarrhea have occurred in cases of massive infection and expulsion of worms.

DOSAGE AND ADMINISTRATION The same dosage schedule applies to children and adults. The tablet may be chewed, swallowed or crushed and mixed with food. For the control of pinworm (enterobiasis), a single tablet is administered orally, one time. For the control of common roundworm (ascariasis), whipworm (trichuriasis), and hookworm infection, one tablet of VERMOX is administered, orally, morning and evening, on three consecutive days. If the patient is not cured three weeks after treatment, a second course of treatment is advised. No special procedures, such as fasting or purging, are required.

HOW SUPPLIED VERMOX is available as chewable tablets, each containing 100 mg of mebendazole, and is supplied in boxes of twelve tablets. VERMOX (mebendazole) is an original product of Janssen Pharmaceutica, Belgium.

US Patent 3,657,267
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MEDICAL JOURNAL

October 1982, Vol. 43, No. 10

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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Minor transient elevations of SGOT have occurred in a small percentage of patients. Therefore, this drug should be used with caution in patients with pre-existing liver dysfunction.

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References 1. Pitts NE, Migliardi JR: *Clinical Pediatrics* 13:87, 1974. 2. Modell W: *Drugs of Choice* 1980-1981. C. V. Mosby Co., St. Louis, 1980, p. 362. 3. Goodman LS, Gilman A: *The Pharmacologic Basis of Therapeutics*, 6th edition, MacMillan Publishing Co., Inc., New York, 1980, p. 1032.



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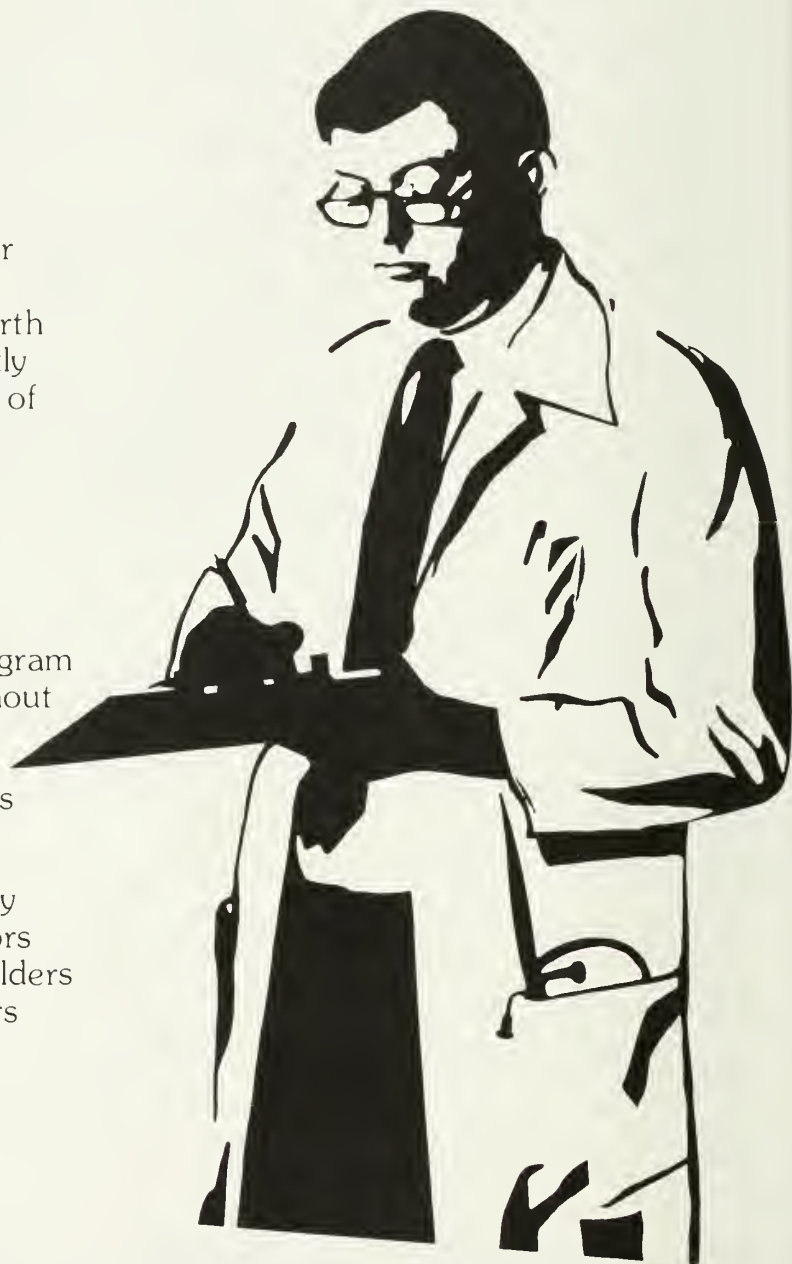
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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 5

OCTOBER 1982

One primary goal I have set for my year as President is to cement a close relationship between the State Society and the various specialty societies. In an effort to meet this goal, I recently spent an evening in Pinehurst at the Annual Meeting of the North Carolina Pediatric Society. I encouraged the pediatricians to support the concept of unity, a message which I also plan to deliver to the North Carolina Society of Ophthalmology and the North Carolina Orthopaedic Association at their upcoming annual meetings in October. The Pediatric Society is an excellent example of a dynamic group of physicians working within their specialty organization in the best interest of the entire profession. Their membership has just topped 500 with membership being emphasized this year as its major goal. I am hoping that each specialty society will feel the need to work closely with the North Carolina Medical Society in our joint and mutual concerns and efforts on behalf of the health care of our patients.

Although the October Bulletin indicates that a vote on the Luken-Lee Substitute would be held prior to October 1, 1982, that did not occur. In the rush for adjournment, Congress continued the FTC through the process of a continuing resolution. A vote on both Luken-Lee HR-3722 (NCMS supports) and the Broyhill substitute (NCMS does not support) will occur during the "Lame Duck" session of Congress. If you see your Congressman between now and the election, be sure to remind him of the importance of this legislation.

I would like every North Carolina physician to be aware that we have three physicians and two auxiliaries running for election on November 2 for seats in the General Assembly. Summerfield (Guilford County) Family Physician W. T. "Bill" Grimsley is a candidate for the 29th District House seat which was newly created in 1981. Charlotte Ophthalmologist Thomas Doyle Ghent is a candidate for the State Senate representing Mecklenburg and Cabarrus Counties, and former State Representative John Varner, a retired Psychiatrist is making a comeback attempt in the 37th House District comprised of Davidson and Yadkin Counties. These men are to be commended for offering their services to the citizens of North Carolina through the political process. The two Auxiliaries who are also giving their valuable time to public service are House candidates Lenora Evans in Wake County and Mae Alexander in Henderson County. They all deserve our support.

Most of the Society's 46 committees met last week during the Annual Committee Conclave in Southern Pines. I was extremely pleased with the enthusiastic and responsible participation of the several hundred who attended the committee meetings over the four-day period. Despite my exhortations to be brief, the Executive Council met for some 8½ hours on Sunday, finally adjourning around 5:30 p.m., after approving the largest budget in the Society's history. Spending will be up in 1983 for both our legislative effort and improved communications for the membership. Bill Hilliard, our Executive Director, and his staff did their usual superb job in seeing that the meeting ran smoothly. Next year's Conclave will be held September 28-October 2, 1983, at the Mid Pines Club, Southern Pines, N.C.

One item of particular interest from the Maternal Health Committee is a report that a special commission appointed by the Secretary of Human Resources to study the dual issues of midwifery and home delivery will recommend the establishment of a licensing board for nurse midwives and permit "at home" delivery by these individuals. The Executive Council took strong exception to this proposal. I will be communicating these feelings to Dr. Morrow in the near future. These issues then may arise during the 1983 Session of the General Assembly.

Many of the actions taken at the Committee Conclave are extremely important and could affect the course of the Society for years to come. For example, the Editorial Board of the NORTH CAROLINA MEDICAL JOURNAL selected Eugene A. Stead, Jr., M.D., of Durham, as the Journal's new Editor. Dr. Stead is well-qualified to build on the fine work done by the current Editor, John H. Felts, M.D., of Winston-Salem. Dr. Felts has shepherded the Journal through many important improvements, and we are confident that Dr. Stead will hammer out an even better publication at the forge where Dr. Felts, Dr. Robert W. Prichard, and the late Dr. Wingate M. Johnson worked so long and well.

Continuing my theme of prior newsletters that "The past is prologue to the future," I'm drawing on words of Past-President John Glasson, M.D. During his 1972-73 year as President, he commented on our professional colleagues who do not belong to the Society or who hold membership without participating in Society activities.

Weigh the words of Dr. Glasson: ". . . . I belong to my state and county and national medical associations for the same reasons I belong to and work in the church of my choice in the community where I live. . . . As one examines this analogy, many parallels appear. . . .both organizations are composed of the major people in my community, and in my sphere of medical practice, those who do extra work, above and beyond the call of duty, for the common good and for the people in the community who need medical care. . . .

. . . .Many people who become disenchanted with the church and its policies withdraw from it, withdraw their financial support, and contribute nothing to the church family; yet they continue to benefit by the good work the church does. Likewise those who withdraw from the activities of organized medicine, who withhold their financial support from the educational, administrative, and political activities of the organization will continue to benefit from its efforts while contributing nothing to them."

The benefits of Society membership and participation have been cited here many times. I urge each of you to consider Dr. Glasson's words and seek a full working partnership in the Society's activities. The common good demands it.

Sincerely yours,

M. S. Redding M.D.

Marshall S. Redding, M.D.
President



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"...particularly effective in soft tissue disorders including sports injuries,"¹ Rufen stops pain at the site of injury and inflammation, not at the level of central perception. There is no dulled sensorium, no special need for warnings about driving or cautions about use of machinery. Your patient gets fast, effective pain relief...potent anti-inflammatory action...excellent tolerance...*plus* the exceptional economy that only Rufen offers. Next time one of your patients asks for pain relief, let Rufen show you how it measures up.



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- Measured against 15, 30 and 60 mg doses of codeine phosphate in a double-blind study of 287 patients, 400-mg doses of ibuprofen proved "significantly better than codeine on almost all pain intensity, degree of relief and duration of analgesia parameters."²
- Measured against a propoxyphene-acetaminophen combination for pain relief after 3rd molar extractions, ibuprofen proved equally effective and caused fewer side effects. Ibuprofen was associated with faster recovery, evidenced by more rapid reduction of trismus and return to normal function.³
- Measured against post-episiotomy pain in 30 patients, "ibuprofen was effective in treating the swelling as well as pain...during the first and worst days. Therefore, it is not only the analgesic but also the anti-inflammatory effect of ibuprofen that are the beneficial factors..."⁴



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Acetaminophen + codeine combination

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- no narcotic risk, red tape, records

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- matchless economy in a modern NSAID

References:

1. Hart FD, Huskisson EC, Ansell BM in Hart FD (editor): Drug Treatment of the Rheumatic Diseases, 2nd Ed, Adis Press, Balgowl Australia, 1982, p. 30.
2. Rondeau PL, Yeung E, Nelson P: Canad Dent Assoc J 46:433-439, 1990.
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INDICATIONS AND USAGE: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in the long-term management of these diseases. Safety and effectiveness have not been established for Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain. Treatment of primary dysmenorrhea.

CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, angio-edema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory drugs (see WARNINGS). Patients hypersensitive to aspirin (see CONTRAINDICATIONS). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration, perforation, or gastrointestinal bleeding can end fatally; however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease, and only after consulting the ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy, this therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: Coumarin-type anticoagulants. The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin: Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS: Incidence greater than 1%. **Gastrointestinal:** The most frequent adverse reaction is gastrointestinal (4 to 16%). Includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). **Central Nervous System:** dizziness*, headache, nervousness. **Dermatologic:** rash* (including maculopapular type), pruritus. **Special Senses:** tinnitus. **Metabolic:** decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS). *Incidence 3% to 9%.

Incidence less than 1 in 100. Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma. **Dermatologic:** vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome and alopecia. **Special Senses:** hearing loss, amblyopia (blurred and/or diminished vision, scotomata and/or changes in color vision) (see PRECAUTIONS). **Hematologic:** neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura eosinophilia, decreases in hemoglobin and hematocrit. **Cardiovascular:** congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Allergic:** syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasms (see CONTRAINDICATIONS). **Renal:** acute renal failure in patients with preexisting significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria. **Miscellaneous:** dry eyes and mouth, gingival ulcers, rhinitis.

Causal relationship unknown. Gastrointestinal: pancreatitis. **Central Nervous System:** paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri. **Dermatologic:** toxic epidermal necrolysis, photo-allergic skin reactions. **Special Senses:** conjunctivitis, diplopia, optic neuritis. **Hematologic:** bleeding episodes. **Allergic:** serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis. **Endocrine:** gynecomastia, hypoglycemia. **Cardiovascular:** arrhythmias (sinus tachycardia, bradycardia, and palpitations). **Renal:** renal papillary necrosis.

OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine, alkaline diuresis may benefit.

DOSAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flareups of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d.

Dysmenorrhea: 400 mg every 4 hours as necessary.

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for the relief of pain. Do not exceed 2,400 mg per day.

CAUTION: Federal law prohibits dispensing without prescription.

Delayed Diagnosis of Juxtaglomerular Cell Tumor Hypertension

Alvin H. Moss, M.D., Lloyd J. Peterson, M.D., C. Wald Scott, M.D.,
Kenneth Winter, M.D., David B. Olin, M.D., and Ronald L. Garber, M.D.

ABSTRACT A 40-year-old woman with a juxtaglomerular cell tumor was diagnosed as having primary hypertension at age 23. A cyst noted on renal arteriography at that time was considered incidental. Seventeen years later worsening hypertension, marked sodium retention, and hypokalemia developed. Arteriography and ultrasound again demonstrated a cyst in the right kidney but it could not be aspirated. Computed tomography showed the cystic-appearing lesion to be solid. Bilateral renal venous renin activities were high but did not lateralize. The hypertension, hyperreninemia, and hypokalemia were cured with removal of the juxtaglomerular cell tumor. The diagnosis of juxtaglomerular cell tumor hypertension can be missed unless one has a high index of suspicion.

JUXTAGLOMERULAR cell (JGC) tumors are a rare cause of hypertension. Nevertheless, JGC tumors should be considered in young adults with hypertension, high plasma renin levels and cystic lesions on excretory urography. Computed tomography (CT) made possible the recognition of such a tumor in a patient thought to have primary hypertension for 17 years. The subtle presentation of these lesions is reviewed.

CASE PRESENTATION

A 40-year-old woman with hypertension since age 18 was admitted because of recent worsening of blood pressure control. A complete evaluation at age 23 had resulted in a diagnosis of primary hypertension. A solitary right renal cyst then noted on arteriography was not further evaluated. Her blood pressure was controlled with polythiazide, reserpine, and guanethidine for 17 years. Within the three months before the present admission she had had two hospitalizations for elevations of her blood pressure to 210/130, accompanied

by nausea, vomiting, and headaches. Each time the patient was hypokalemic (2.0 and 2.2 mmol/L). Medications included spironolactone, prazosin, metoprolol, clonidine, and potassium chloride.

She had mild facial and peripheral edema; her blood pressure was 178/120. Admission serum electro-

lytes were normal, the blood urea nitrogen was 10 mg/dl, and the serum creatinine 0.9 mg/dl. Urinary sodium concentration on the second, fourth, and sixth hospital days was less than 5 mmol/L. Urinary potassiums ranged between 70 and 85 mmol/L. Supine plasma renin activity measured by immunoassay for angiotensin I was 13.4 ng/ml/h (reference interval 0.17-3.58, Bio-Medical Reference Laboratories,

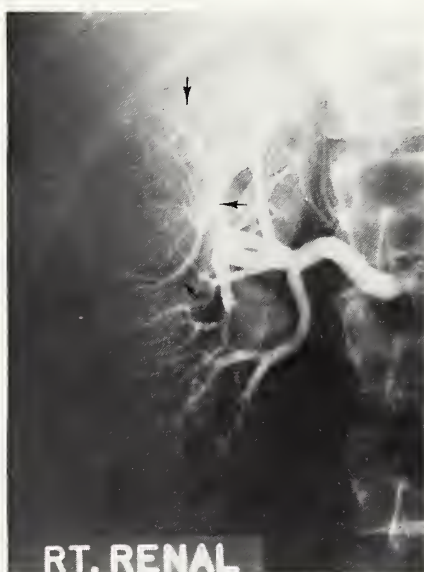


Figure 1a. The arterial phase of the arteriogram shows a hypovascular mass (arrows) in the lateral aspect of the upper pole of the right kidney. (The upper arrow indicates splay of renal arterioles secondary to tumor compression.)



Figure 1b. On a late film of the arteriogram the mass appears to be a cyst (arrows).

From the Departments of Nephrology, Urology, Pathology and Radiology, Wesley Long Community Hospital, Greensboro, N.C.

Reprint requests to Dr. Moss at 208 W. Wendover Ave., Greensboro, N.C. 27401

Inc.). Twenty-four hour excretion of urine for vanillylmandelic acid (VMA) was normal. Renal arteriography revealed widely patent renal arteries and a hypovascular mass in the upper pole of the right kidney (Figures 1a and 1b). Right renal venous renin was 6.96 ng/ml/h, left renal venous renin 7.18 ng/ml/h, and inferior vena cava renin 6.03 ng/ml/h. Ultrasound of the right kidney was consistent with a cystic mass in the right upper pole (Figure 1c), but no fluid could be aspirated on puncture. Computerized tomography showed the mass to be a solid tumor (Figure 1d).

At surgery a well-circumscribed 4

rapidly tapered. Supine plasma renin level one week after surgery was undetectable and serum potassium has remained normal without therapy. Two weeks after surgery all antihypertensive medications were discontinued, and the patient remains normotensive one year later.

DISCUSSION

Fewer than 20 cases of JGC tumor hypertension have been reported and all within the last 25 years.¹⁻⁸ Hyperreninemia has been present in all cases in which renin activity was measured. The hypertension has

been cured by nephrectomy and post-nephrectomy renin levels have been low.

The tumors occur in the young with the average age being 22 and may be present but unrecognized for years in hypertensive patients. Hypokalemia developed four years after the onset of hypertension in one patient, and after three excretory urograms over a six-year period failed to show a JGC tumor, one was localized with timed-infusion nephrotomography.³ Two patients with hypertension, hypokalemia, and normal renal arteriograms had their JGC tumors diagnosed after one to two years when selective renal arteriography

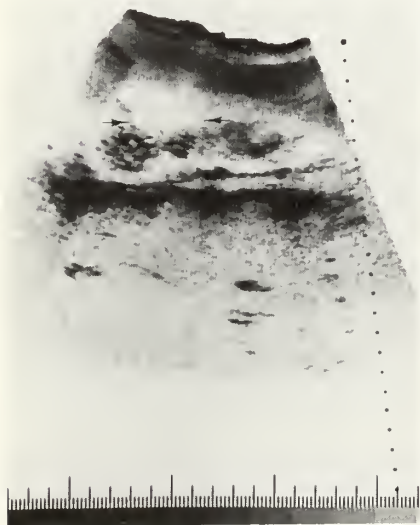


Figure 1c. Ultrasound shows a sonolucent mass (arrows) consistent with a cyst.

x 4 cm gray-tan tumor compressing adjacent renal tissue in the upper pole was found and a right nephrectomy performed. The tumor was composed of sheets of polygonal cells with large vesicular nuclei with no mitoses and little nuclear pleomorphism. The cytoplasm was pale and contained granules. Frequent vascular sinusoids and occasional tubular structures were present (Figure 2). Sections were sent to pathologists at the Armed Forces Institute of Pathology who concurred with the diagnosis of JGC tumor.

Following surgery, the patient underwent a spontaneous brisk diuresis losing nine pounds. Urinary sodium concentration rose to 77 mmol/L, and urinary potassium concentration fell to 17 mmol/L. Her antihypertensive medications were

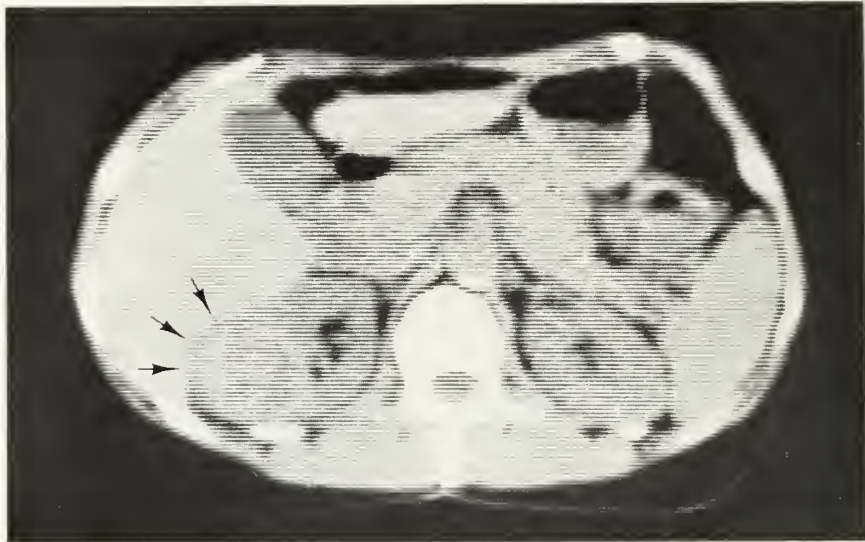


Figure 1d. CT scan shows a solid tumor surrounded by a rim of hemorrhage (arrows).

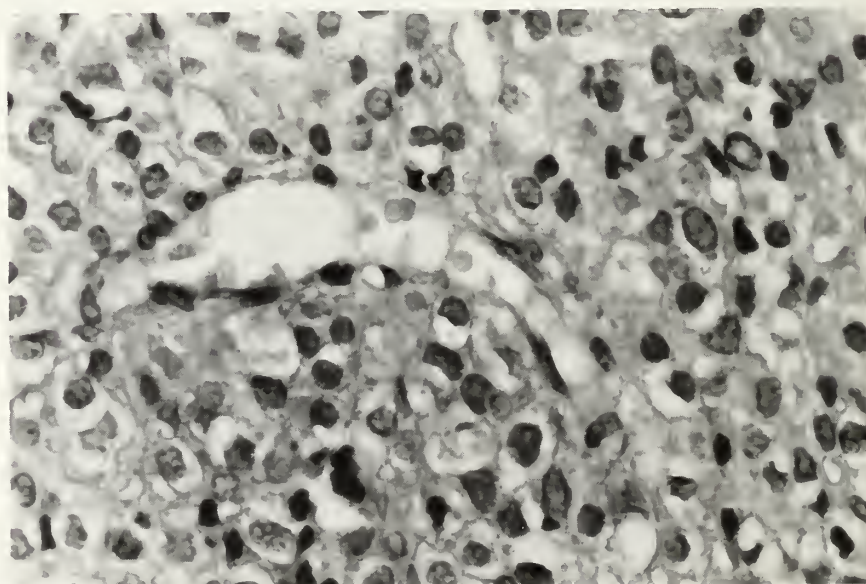


Figure 2. Section from the tumor showing polygonal cells with vesicular nuclei and pale granular cytoplasm. A vascular sinusoid is present in the center. H and E x 400.

raphy on the side of renin lateralization revealed the tumors.⁶⁻⁸ One patient underwent adrenal surgery for suspected primary aldosteronism before the recognition of his JGC tumor.¹

Our case illustrates several important points about JGC tumors. First, a JGC tumor may be present for years before the development of hypokalemia. Second, these tumors can cause marked secondary aldosteronism with profound sodium retention and hypokalemia. Third, measurement of renal venous renin activity may not be lateralizing. Finally, excretory urography, arteriography, and ultrasound may be insensitive or misleading but CT scan

can be an extremely helpful adjunctive study.

This case further demonstrates the importance of a high index of suspicion. The only abnormality on initial screening may be a cystic-appearing lesion on excretory urography. The serum potassium concentration may remain normal late into the course of the illness. Plasma and renal venous renins along with CT scanning of the kidneys can help to confirm the nature of the tumor.

Acknowledgments

The authors thank Charles J. Davis, Jr., M.D., Charles C. Conley, M.D., and William R. Cowan, of the Armed Forces Institute of Pathology for consultation on the pathological diagnosis; Dr. Palmer Shelburne for re-

ferral of the patient; and Shelby Mitchell for preparation of the manuscript.

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J. CHALMERS DA COSTA [1863-1933]

A man who doesn't worry at all doesn't care a whole lot. I should not want a man who did not care a whole lot operating on me or mine. Perhaps worry is a device of nature to make us try to do our very best. If we knew we should not worry, we might be tempted at times to be careless. If a surgeon analyzes his worry he can get a line on what sort of man he is himself. If he worries only because he fears he may be sued, may lose a bill, or may hurt his reputation, then with him the voice of conscience is the fear of getting caught. If he worries because of the poor patient and the credit of surgery, then he is really a conscientious man.

The Trials and Triumphs of the Surgeon, Ch. 1

Prospective Obstetric Management of a Twin Pregnancy Complicated By Death of One Twin

Sarah W. Hainline, M.D., and David A. Nagey, M.D., Ph.D.

ABSTRACT A report of a twin gestation in which the patient was followed from a time before death of one twin until delivery is presented. The importance of monitoring fetal growth by ultrasound, serial coagulation parameters, maternal blood pressure and placental function is emphasized. Deterioration of any of these factors may indicate delivery prior to term to enhance the likelihood of a successful outcome for the surviving twin.

OUR recent experience in managing a twin gestation in which one twin was lost in utero and the other successfully delivered prompts this report.

A 22-year-old black woman, gravida 2, para 1-0-1, presented to the Obstetric Clinic for prenatal care at 14 weeks gestation by dates. General examination was within normal limits. Blood pressure was 110/70, weight was 209 lbs. Pelvic examination revealed the uterus enlarged, compatible with a 14-week gestation.

Obstetrical history included the spontaneous vaginal delivery of a 7 lb, 3 oz. male at term four years previously. Initial laboratory evaluation revealed a hemoglobin of 11.7 g/dl. Urinalysis showed 25-30 WBC/HPF, and urine culture yielded a growth of 100,000 colonies/ml *Klebsiella pneumoniae*. Blood type was O, Rh negative and the Coombs test was negative. The patient was given sulfamethoxazole and subsequently had a negative urine culture.

Uterine growth was considered appropriate for gestational age until 19½ weeks by dates. At that time

the uterine fundal height was noted to be 26 cm, above the symphysis pubis. Obstetrical ultrasound examination at 21 weeks by dates revealed a twin gestation with biparietal diameters of 51 mm and 52 mm, compatible with a 22-week gestation utilizing a singleton growth table. Fetal cardiac motion was noted in both twins.

Following the diagnosis of twin gestation, the patient was examined weekly in the clinic. Uterine fundal growth increased to 35 cm at 27 weeks gestation by dates. Follow-up ultrasound examination was performed at this time and revealed no evidence of fetal motion or cardiac activity in one twin. The head of this twin appeared to be distorted and collapsed. The other twin showed normal fetal motion, cardiac activity, and appropriate interval growth. Intrauterine fetal demise of one twin was confirmed on repeat ultrasound examination one week later.

Additional laboratory data included the following: oral glucose tolerance test at 23 weeks gestation by dates was negative; 24-hour urine collection at 23 weeks contained 200 mg protein with a calculated creatinine clearance of 204 ml/min. Blood chemical determinations, including total protein, albumin, calcium, phosphorus, bilirubin, creatinine, LDH, SGOT, and alkaline

phosphatase were normal.

Weekly determinations of fibrinogen concentration were begun at 29 weeks by dates. Initially 222 mg/dl fibrinogen rose to 330 mg/dl by 32 weeks and to 390 mg/dl by 39 weeks. Fibrin split products were undetectable at 35 weeks. Platelet count at 37½ weeks was 264,000. Indirect Coombs' test was negative at 18 weeks, 27 weeks, and 38 weeks.

Ultrasound at 34 weeks by dates showed the living twin in the cephalic presentation with a biparietal diameter of 81 mm, consistent with a 34-week gestation. Interval growth was considered normal. The patient's weight decreased to 200 lbs. by the mid trimester, but with nutritional counseling and a program of modified bedrest, weight increased to 208 lbs. before delivery. Blood pressure remained stable at 110/70 to 120/80.

A fetal activity test at 39 weeks menstrual age was nonreactive. A subsequent contraction stress test demonstrated occasional late decelerations of the fetal heart rate and was interpreted as suspicious. The patient was admitted at that time for induction of labor. Her cervix was dilated 1½ cm with no effacement. The presenting vertex was floating. Admission laboratory data included a hemoglobin of 11.4 g/dl, platelet count 248,000, pro-

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thrombin time ratio of 0.9, serum fibrinogen 375 mg/dl, and fibrin split products at 5 ug/ml.

Induction of labor with oxytocin by controlled intravenous infusion was begun. Regular contractions of moderate intensity every 3 to 4 minutes developed. Mild variable decelerations were noted. Spontaneous rupture of membranes with clear fluid occurred approximately four hours after the induction was begun. Cervical dilatation to 10 cm progressed slowly. Internal monitoring revealed occasional late decelerations. Approximately 16 hours after induction had begun, and almost three hours into the second stage of labor, following prophylactic administration of 2 g cephamandole intravenously, the patient underwent low transverse cervical cesarean section under epidural anesthesia because of failure of descent of the fetal head in the second stage of labor. A 3040 g living female infant was delivered with Apgar scores of 8 and 9 at 1 and 5 minutes. A macerated fetus of approximately 24 weeks gestational age was also delivered, as was a fibrotic placenta. The placenta of the living twin was normal. There was no intraoperative evidence that the dead twin obstructed the birth canal.

Autopsy of the stillborn twin revealed immaturity (weight 180 g, crown-heel length 26 cm), severe maceration, necrosis of visceral organs, and no congenital anomalies. The dichorionic, diamniotic placenta showed severe atrophy and fibrosis. Unfortunately, no placental weight was recorded.

The post-delivery course of the neonate was uneventful. The mother's postoperative course was marked by endometritis (non-hemolytic streptococcus and *E. coli* were recovered via culdocentesis) that responded to the administration of penicillin, tobramycin, and clindamycin. She was discharged with her infant on the 13th postoperative day.

DISCUSSION

Numerous factors have been implicated in causing the death of one fetus in multiple gestations, and include twin-to-twin transfusion, placental

abruption, placental insufficiency which may be secondary to maternal renal or hypertensive disease or preeclampsia, velamentous insertion of the umbilical cord resulting in compromised fetoplacental circulation, and congenital anomalies.^{1,2} The cause of fetal death in this case could not be determined.

Reported complications from the retention of a papyraceous or macerated twin include the premature delivery of the other sibling, stillbirth of the sibling, preeclampsia, mechanical interference with labor and delivery necessitating cesarean section, and postpartum hemorrhage or infection due to unrecognized retention of the dead fetus.^{1,3,4}

Yoshioka has reported the condition of multicystic encephalomalacia resulting in cerebral palsy and neonatal seizures in the surviving sibling of a twin gestation complicated by fetus papyraceus.⁵ He and others^{6,7} have attributed these cerebral lesions to vascular occlusion due to embolism or thrombosis. Benirschke has reported the autopsy findings of multiple thrombi occluding vessels in kidney, spleen, and brain in an infant who had a stillborn, macerated twin.⁸ Emboli of necrotic placental material have been described in other patients by Moore.⁹ Moore proposed that fetofetal transfer of tissue thromboplastins from the dead fetus through placental vascular anastomoses causes intrauterine disseminated intravascular coagulation. It is conceivable that the transfer of thromboplastic substances to the maternal circulation might occur as well. With this in mind, the reported patient was followed closely with serial fibrinogen concentrations in an effort to detect the early stages of a consumptive coagulopathy. Her serum fibrinogen concentrations, fibrin split products, and platelet count remained normal through the remainder of the pregnancy.

Twin gestations should be monitored with serial ultrasound examinations every two to four weeks in order to detect deviations from expected growth patterns with consideration given to active intervention if persistent discordancy of growth is seen. Leveno has pub-

lished a twin specific curve for biparietal diameter versus estimated gestational age and recommended its use in twin gestation.¹⁰ We did not use this curve as there was no comparison of obstetric with neonatal dates.¹¹ If the intrauterine death of one fetus of a multiple gestation is diagnosed, the growth of the surviving twin should be more closely watched, as the condition(s) causing death of the papyraceous twin may be present in the sibling, or the initial death may cause the death of the surviving twin, as mentioned. Even with uncomplicated twin pregnancies, it is probably most appropriate to repeat sonography on a monthly basis as there is no other means of observing growth.

With a dead twin, serial determinations of coagulation profiles, close observation of maternal blood pressure for preeclampsia, and surveillance of placental function via fetal activity tests or contraction stress tests are mandatory. Deterioration in any of these may necessitate delivery before term, as in this patient. A fetal activity test was not performed until 39 weeks in this patient. Toward optimum outcome, however, the authors recommend that fetal activity testing in twin pregnancy be carried out weekly from 30 to 34 weeks gestation until term. By careful attention to the potential complications of the intrauterine death of one twin, the chances for a successful outcome for the mother and for the surviving fetus may be enhanced.

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Needle Biopsy in the Evaluation of the Thyroid Nodule

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ABSTRACT Needle biopsies were performed on 100 patients referred for evaluation of thyroid nodularity. Adequate samples were obtained in 98% of the patients. Three malignant nodules were identified by biopsy, yet two of these were considered benign clinically. Needle biopsy reduced the percentage of patients for whom surgery was considered diagnostically necessary from 50% to 17%, and only 14 of our patients had thyroid operations. When surgery was performed, cytohistologic data correlated well with surgical pathology. We endorse thyroid needle biopsy as a safe, accurate and highly useful diagnostic technique in the evaluation of thyroid nodules.

THE management of solitary or multiple thyroid nodules remains controversial, despite discussions of this problem in several hundred articles over the last century. Thyroid nodules are relatively common, with an incidence of 4.2%.¹⁻³ Malignancy of the thyroid gland by contrast is rare, affecting 25 people per million population annually.^{1,4,5} Thus benign lesions are much more common than malignant ones, and surgical excision of these benign nodules is unnecessary. The goal in evaluating the thyroid nodule is to identify the malignant lesion.

Numerous diagnostic tests have been used in evaluating the thyroid nodule, and these are summarized in several recent excellent reviews.⁵⁻⁸ History, physical exam and the usual thyroid function tests, though important in assessing the initial nodule, have been unreliable in differentiating benign from malignant lesions. Radioiodine scanning identifies "cold" (non-functioning) nodules suspicious for malignancy. However, 83% of the

cold nodules are, in fact, benign, and the incidence of malignancy in "hot" (hyperfunctioning) nodules is about 4%.^{7,9-11} Ultrasonography is useful in displaying anatomy, but does not give histologic information. Cystic lesions, generally considered benign, have a 7% incidence of malignancy.^{6,12-14}

Needle biopsy of the thyroid nodule is a safe and relatively inexpensive diagnostic tool, and it is more reliable than other tests in differentiating malignant from benign disease.^{6,7} Needle biopsy has been used effectively in Sweden since 1950, and over 18,000 biopsies have now been done at Karolinska Hospital.¹⁵ Hamburger and associates¹⁶ have published the results of biopsies performed on 910 patients. Their series included 116 surgically confirmed malignancies. Of these, only 59% were recognized on clinical grounds, but with fine needle biopsy 99% were considered malignant or possibly malignant before surgery. Many other authors have had similar results with the needle biopsy.^{4,12,17-21} Despite these data, the technique is not unanimously endorsed.²² In this article we describe our experience with needle biopsy in 100 patients with thyroid nodules.

MATERIALS AND METHODS

The study group consisted of 100 patients referred for evaluation of suspected thyroid abnormalities. There were six men and 94 women, ranging in age from 19 to 76 years. Initial evaluation included history, physical exam and, where indicated, thyroid function tests, antithyroid antibodies, and thyroid imaging. Based on this evaluation, patients were placed into one of three categories reflecting clinical assessment of their risk for thyroid cancer: CATEGORY 1 → cancer probable; CATEGORY 2 → cancer possible; or CATEGORY 3 → probably benign.¹⁶

After the clinical evaluation, patients were subjected to needle biopsy, using three needle sizes as described by Hamburger.¹⁶ Local anesthesia was accomplished using 1% lidocaine. All patients underwent fine needle aspiration using 22-27 gauge needles and a 20cc syringe. Cellular material obtained was thinly spread on a glass slide, fixed with aerosolized fixative or alcohol, and stained using a standard Papanicolaou technique. Nine patients also underwent cyst aspiration using an 18 gauge needle, and in 14 cases aspiration needle biopsies

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(ANB) were accomplished with 16 gauge needles. Cutting needle biopsy (CNB) was performed in four cases, using the Tru-cut needle (Travenol Laboratories, Deerfield, Ill. 60015). Each biopsy specimen was then interpreted and placed into one of three cytohistological categories: CATEGORY 1 → malignancy probable, CATEGORY 2 → malignancy possible, and CATEGORY 3 → probably benign.

RESULTS

Adequate specimens for cytohistological interpretation were obtained in 98% of the patients. Specimens were inadequate in two cases, both performed with the fine needle aspiration technique alone. There were no significant complications, and all patients tolerated the procedure well. In four cases small hematomas occurred, but these were easily controlled with local pressure.

Our results are presented in Tables I and II, using the analysis methods of Hamburger.¹⁶ Table I shows the changes in diagnostic category resulting from the cytohistological data. Three nodules were malignant on biopsy, yet two had been considered non-malignant clinically. Needle biopsy reduced the percentage of patients in categories I and II, for whom surgery was being considered, from 50% to 17%. Patients in category III (probably benign) increased from 50% to 83% of the total, and in these patients surgery was usually avoided. Thus, only 14 of our 100 patients with nodules underwent surgical exploration.

In Table II, biopsy cytohistological categories are correlated with operative findings for the 14 patients who underwent excisional biopsy. The two patients in cytohistologic category I (malignancy probable) did have malignancy at surgery. One had a papillary adenocarcinoma, the other a follicular carcinoma. All the other lesions, placed in cystohistological categories II and III, were benign.

Four of the patients who underwent surgery had aspiration needle biopsy as well as fine needle aspira-

TABLE I
Changes in Diagnostic Category Resulting From Cytohistological Data

Clinical Category	Number Patients	Cytohistological Category		
		I	II	III
I (malignancy probable)	17	1	3	13
II (malignancy possible)	33	1	6	26
III (probably benign)	50	1	5	44
Total	100	3*	14	83

TABLE II
Cytohistological Category

Cytohistological Category	Number Patients	Surgery	
		Benign	Malignant
I (malignancy probable)	2	0	2
II (malignancy possible)	8	8	0
III (probably benign)	4	4	0
Total	14	12	2

tion, but aspiration biopsy did not add significantly to the precision in diagnosis. One of the patients had a papillary adenocarcinoma, and was placed pre-operatively in cytohistological category I. The others had benign lesions; two of these had been put in category II, one in category III. All patients undergoing Tru-cut cutting needle biopsy had benign disease.

DISCUSSION

Our experience is similar to that of others, and demonstrates the safety and accuracy of needle biopsy of the thyroid.^{4,12,17-21} Other conventional methods of evaluating thyroid nodules, including clinical assessment, laboratory tests, suppression by exogenous thyroid hormone and scanning techniques, are imprecise. In our series, one malignant thyroid nodule did decrease in size with thyroid hormone suppression. Most cold solitary nodules, suspicious for malignancy on clinical grounds, were benign when biopsied.

When then, with such excellent results, should there be any hesitancy in accepting the biopsy technique? The answer may lie in the natural conservatism and skepticism of some physicians, and in the lack of the availability of an experienced cytohistopathologist. The latter is an essential prerequisite for doing the procedure. In addition, there are some complications and limitations of the technique of thyroid needle biopsy that should be mentioned.

Major complications have been seen only with the use of large needles such as the Tru-Cut needle. Implantation of thyroid carcinoma into the skin along the needle tract has been described, and has provoked harsh criticism of the technique. However, we could identify only two cases of implantation in the thyroid literature, both involving Vim-Silverman needles.^{23,24} To our knowledge, implantation due to fine needle biopsy has not been reported.⁶ Thus the problem of implantation has been significantly overestimated. Other potential complications of biopsy include injury to trachea, laryngeal nerve, and associated blood vessels.^{6,7,16} Once again, these have occurred only with large needles, and have not been a significant problem with fine needles. Occasionally, hematomas form, and transient sweating and dizziness may occur. In our 100 patients, there were no serious complications.

The principal limitation of the fine needle biopsy is the inability to differentiate follicular adenomas from well-differentiated malignant follicular neoplasms.^{1,7,8,16} This is also difficult, however, with large needle biopsy and even with examination of the surgical material itself.⁷ This problem may be addressed by considering all follicular neoplasms equally suspicious, and advising surgery for all of these lesions. In our patients who have not had surgery, we have recommended a repeat biopsy at one year. Another reported limitation of the thyroid

* One of the three patients declined surgery.

biopsy has been inadequate sampling. Characteristically this is a problem with inexperienced operators, and can be easily overcome with training. Interpretation of the sample material is demanding, and requires a skilled cytopathologist. In our group, sampling technique was excellent, with inadequate specimens in only 2%.

Thyroid biopsy provides the most direct information and has the best predictive value of any diagnostic test. It permits avoidance of unnecessary surgery, and is a valuable early diagnostic test. Recent data⁸ further suggest that thyroid biopsy is the most cost effective first test in diagnosis. Our initial experience with the thyroid biopsy technique confirms that of others: the technique is safe and accurate, highly

useful, and should be accepted with enthusiasm.

Acknowledgment

We appreciate the contributions of Dr. Eugene Furth, who reviewed the manuscript.

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JOHN EARLE [1601?-1665]

His gaines are very ill got, for he lives by the hurts of the Common-wealth. He differs from a physician as a sore do's from a disease or the sicke from those that are not whole, the one distempers you within, the other blisters you without. . . . The rareness of his custome makes him pittillesse when it comes: and he holds a Patient longer then our Courts a Cause.

Microcosmographie, Ch. 42

Toxic Encounters of the Dangerous Kind

PARAQUAT — THE WEED AND PEOPLE KILLER

Until the late 1970s most of us did not know (or care) about the herbicide paraquat. At that time the news media explained to the public that the Mexican government was conducting a marijuana elimination project that involved the aerial spraying of herbicides including paraquat. At the time this project was of some concern to the United States because of the amount of marijuana (60%) entering our country from Mexico. Not many people in this country became ill because of this venture but knowledge of paraquat poisoning should be part of the health care profession's data base.

Paraquat is one of the most serious toxicological encounters a person can experience. This substance is so dangerous that if 20 ml or more of the concentrated solution is ingested, death is very likely in one-third to one-half of the cases; 10% of people who ingest granular paraquat will die. Toxicity results primarily by ingestion either accidentally or for suicidal or homicidal purposes. In Great Britain most cases of poisoning due to this product are the result of deliberate self-destructive acts. Sufficient paraquat can be absorbed percutaneously to cause severe or even fatal poisoning but this is not common. Toxicity has been reported as a result of inhalation of the product during spraying. The subject of paraquat is not an idle one; this substance is being used in our state.

Paraquat toxicity can occur as an acute episode or as a subacute problem. (I believe it would be wise to mention here one of the most remarkable facts about this very dangerous substance: paraquat undergoes complete detoxification on contact with earth). The four major adverse effects on the body produced by this herbicide are (1) corrosion of the gastrointestinal tract, (2) renal tubular necrosis, (3) hepatic necrosis, and (4) pulmonary fibrosis. The severity and course depend on the amount ingested.

Acute toxicity results from the remarkably caustic effects of the wetting agent in paraquat. This produces burning and ulceration of the tongue, throat and esophagus (including the possibility of esophageal perforation) followed by abdominal pain, vomiting and diarrhea. One of the most peculiar clinical features of paraquat poisoning is the formation of a pharyngeal membrane which resembles that of diphtheria very closely. If no history of paraquat ingestion is obtained the presence of this membrane can be disconcerting to say the least. If it is not quickly identified valuable time for treatment is lost. One clinical clue: paraquat ingestion generally affects the

tongue; a membrane can be very much in evidence here. In contrast, diphtheria generally spares the gums, the floor of the mouth and the tongue. At least think of paraquat in patients with oropharyngeal membranes. In massive acute ingestions such as with over 30 mg/kg or 50 ml of the concentrate, death is likely within several hours to one or two days with such clinical features as vomiting, diarrhea, fluid loss, hypotension, coma, convulsions, cardiac, hepatic and renal failure and typically pulmonary edema.

If the patient ingests as little as 4 mg/kg or more the signs and symptoms of the acute form are present but are more protracted but less severe. This is referred to as subacute paraquat toxicity. In this form pulmonary involvement begins 24-48 hours after ingestion. Here a picture resembling adult respiratory distress syndrome occurs which progresses to pulmonary fibrosis in only a few days. Renal failure is common secondary to acute tubular necrosis. Liver damage is also common and necrosis of the adrenal gland can occur. The most dramatic clinical presentation is that of progressive respiratory failure. Patients who develop the pulmonary complications usually (but not invariably) follow an inexorable course to death.

As in most clinical problems the diagnosis depends on a careful history and physical exam (especially occupational history) and a high index of suspicion. There is a "quicky" urine test for paraquat poisoning: add 10 ml of urine to 2 ml of a 1% solution of sodium dithionite in sodium hydroxide. If paraquat is present in concentrations of 1 ppm, the urine becomes blue. Plasma paraquat levels can be helpful in diagnosis and management; however, this test is certainly not widely available in North Carolina. A semiquantitative test can be performed quite readily by applying the urine screening test to 2 or 3 ml of plasma. If a blue color results, the test is positive; generally the darker the blue color, the higher the plasma level, the worse the prognosis.

The aims of the management are to remove paraquat from the GI tract, increase excretion of this product and prevent pulmonary damage. The emergency room treatment should include a cautious gastric lavage using Bentonite or Fuller's Earth (remember that paraquat is detoxified on contact with earth). Following the lavage, Fuller's Earth or Bentonite, along with a saline cathartic, should be administered every two hours or so to ensure more rapid GI excretion. Ideally, serial plasma paraquat levels help to guide management. Hemodialysis and charcoal hemoperfusion are thought to be extremely effective measures for removing paraquat at least in some

cases. Forced diuresis is of doubtful value but probably should be tried if renal function is normal. Because paraquat selectively accumulates in the lung, the main focus of management should be to prevent this (by removal of paraquat of GI tract, prolonged hemodialysis, etc.). In addition, investigators have tried to prevent the pulmonary disaster by using corticosteroids, immunosuppressive agents, fibrinolytic agents and superoxide dismutase — none of which seems to be the answer. In some recent animal studies the use of Vitamin E to prevent the formation of superoxide radicals (currently believed to be the culprit causing pulmonary fibrosis in paraquat poisoning) was less than encouraging. Oxygen administration enhances the pulmonary damage caused by paraquat; therefore, administer a “diminished” O₂ supplement to your patient.

Be impressed that paraquat poisoning is bad news. A very frightening feature in a patient with this dan-

gerous encounter is the onset of renal failure which effectively prevents the elimination of the absorbed paraquat; the lungs will invariably suffer. Peak plasma level is often achieved within a few hours of ingestion, even before proper medical care can be given. Thus for many, the outcome is determined before you can act.

If I frightened some of you initially by mentioning Mexican marijuana and paraquat in the same paragraph, fear not. Today 80% of this “herb” that enters the U.S. comes from Colombia and, to my knowledge, is not contaminated with paraquat.

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and Poison Prevention
N.C. Chapter of the American Academy
of Pediatrics

DOROTHY PARKER [1892-1967]

Razors pain you;
Rivers are damp;
Acids stain you;
And drugs cause cramp.
Guns aren't lawful;
Nooses give;
Gas smells awful;
You might as well live.
Enough Rope, “Résumé”

Editorials

REPORT FROM THE EDITOR

Fortunately, the North Carolina Medical Society provides the editorial office a little money each month for expenses. It isn't much but it is quite sufficient and a very modest surplus has accumulated. We have postal expenses, must repair typewriters, need staples and so on. One of our needs, not the only one to be sure, is met, at work, by my employer and at home by the household budget; the society has yet, to my knowledge, been charged for a wastebasket or for garbage disposal.

We do have a lot of garbage, almost all paper. How many trees we help dispose of each year in this way can only be guessed at. Most of the stuff we get in the mail isn't worth opening and isn't. We can recognize a circular without value at 30 paces and less than first class mail gets fleeting attention. Yet the tide flows on and on oblivious to its destination, caring not that it has little influence on the *Journal's* course or on medical events in North Carolina.

Still the mails do occasionally bring items of interest. The monthly Morbidity and Mortality Reports, for example, journals from other societies here and abroad for which we exchange our own, and recently a number of interesting reports which deserve more attention and comment than we can give them. The AMA is a constant source as are the many agencies of the federal government and many mysterious firms, linked loosely if at all, with medicine, send us their annual reports. People try to sell us cartoons, beseech us to print advertising handouts as news or medical fact, and send us pictures of new medical devices and new medical vice-presidents of their companies. We strive, usually successfully, to protect our readers from this onslaught.

If there were space, we would save everything for a year, classify it, weigh it, and report on it to the Executive Council, submitting a brief summary as information. Occasionally, some of these reports are of considerable interest and should be analyzed because some of our readers might be interested in them too. At the moment, neatly stacked on the corner of my desk, are seven reports which should be treated kindly, reviewed and abstracted because they contain valuable data. Unfortunately, by the time they can be read, mulled over and written about, they will have lost all their immediacy.

The AMA is responsible for two of them:

1. The AMA House of Delegates Handbook, June 13-17, 1982, which is really a fascinating document, and

2. Proceedings of the House of Delegates of Las Vegas, Nevada, December 6-9, 1981, 35th Interim Meeting.

The issues the AMA must consider are beyond number and most of us can hardly appreciate the work that has to be done in such consideration.

Three come from the U.S. Department of Health and Human Services:

1. Mortality From Diseases Associated With Smoking: United States, 1960-1977.
2. Highlights From Wave I of the National Survey of Personal Health Practices and Consequences: United States, 1979.
3. The Status of Hospital Discharge Data in Denmark, Scotland, West Germany and the United States.

The Robert Wood Johnson Foundation has sent us a fascinating special report, "Medical Practice in the United States," which needs to be read in conjunction with "Medical Practice in the 1980's." "Physicians Look at Their Changing Profession," a report commissioned by the Henry J. Kaiser Foundation and carried out by Louis Harris and Associates.

The batch weighs $7\frac{3}{4}$ pounds and has a volume of 3.2 cubic feet, so it may be some time before you hear more about any of them.

J.H.F.

ELEVATORS: HAZARDOUS TO YOUR HEALTH

Today we try to prevent occupational diseases and compensate those afflicted. Many sufferers are innocent bystanders who must work to live and cannot be held responsible for their illnesses unless they refuse to protect themselves. Often neither employer nor employee can be found at fault, particularly when risk cannot be determined until enough time has passed for toxic effects of industrial products, such as the carcinogenicity of vinyl chloride, to be recognized. In an industrial society this is a risk of what was once called progress.

In today's society it is sometimes not appreciated that the critical unprotected occupation is neither in industry nor in such post-industrial trades as data processing, but in consumption. Lung cancer, arteriosclerosis, hypertension, diabetes mellitus and cirrhosis of the liver can be attributed in large measure to our own overindulgence. Unfortunately, awareness of this relationship does little to improve our vital statistics. When habit collides with scientific truth,

buttressed by arcane statistical analysis and often presented to the public as an eleventh commandment, habit triumphs.

The skyscraper is the great symbol of this consumptive society. When we cannot move laterally because land is too dear, we ascend, boxing in the sky. The hero of this domestication of space is Elisha G. Otis, who in 1854 demonstrated that stairs were not the only way up and down. Elevators are really the crossroads of our modern world, making about 50,000,000,000 trips annually. The often uneasy riders of the nearly 3,000,000 elevators must then cope with unpredictable and inhuman machinery.

How should we accommodate to such public transportation? In tall buildings and department stores, before elevators became fully automatic, it was easy. Each vehicle had its operator, controlling rise and fall by delicate touch under the direction of a resplendently uniformed captain who directed passengers to "Up car! Down car!" and warned shoppers to wait until the elevator stopped before boarding and to "Watch your step." Sage advice indeed. When a guide is present, our bonds with earth are easily maintained. We know where to get off and even enjoy being told so. Without such a guide, our connections with reality can become tenuous indeed.

The more densely populated the area, the dearer the real estate and the more numerous the skyscrapers. So it is not surprising to find a clinic in White Plains, N.Y., for those passengers who suffer from claustrophobia and acrophobia, fear of tight spaces and of heights. The ziggurats of Manhattan may induce behavioral disorders but they can hardly be expected to provide shoppers compensation.

If the elevator is seen as tomb or womb, attention might be given to restoring the escalator. These devices are open, allow riders to get on and off at will and hide their control panels from consumers. The elevator with a view may be safer, too. The rider sees where he is going and can be seen by friends in the lobby, affording a sense of security not possible in traditional buildings.

If we are to cope with the diagnostic problems generated by the human response to elevators, more observations are essential. The aim of therapy must be

mastery of the machine so we must recognize character traits which make such active autonomy possible. No place is better than a hospital for the study of such behavior. Here are the anxious family, the ministerial visitor, the devoted house officer, the polished physician — a marvelous mixture of sophistication and naivete, all in the same elevator going up or down.

Hospital administrators worry about elevators: maintenance, depreciation, traffic load, patient transportation. So they urge employees to walk up one and down two flights of stairs. But there is always the fat maid who would not think of walking for fear of losing face; there is the quartet from hospital maintenance who must go together by elevator to replace a single lightbulb. Then there is the person in a hurry who charges in as soon as the door opens, no matter that somebody wants off, as well as the rider who doesn't care whether the car is going up or down. Others won't travel alone, getting off when you do, perhaps having visions of being stranded alone between floors or of being on a runaway elevator going up and down uncontrollably, unwilling to stop anywhere.

The sudden conversationalist also deserves serious study. This person, ordinarily seen and not heard, begins to chatter on boarding, seemingly to enlist fellow passengers for support. A variation is seen in the gum chewer who masticates quietly when at her desk or in the hall but pops and smacks loudly on boarding the elevator. For these people sound is an essential reminder of their humanity.

Because children usually take our miraculous carriers for granted, something of value may be learned from watching them. No one can handle an automatic elevator as gracefully and with such an air of mastery as a kindergartener who asks briskly and distinctly for the floor you wish, who holds the door open just long enough and who is aware that the hand interrupting the photoelectric beam will restrain threatening doors. As he deplanes, he never trails his hand behind him either to keep those doors from pursuing, certain of his destination and sure he can get back where he came from. Will this mastery vanish in adolescence and lost innocence be replaced by fear of falling?

J.H.F.

OLIVER WENDELL HOLMES [1809-1894]

The young man knows the rules, but the old man knows the exceptions. . . . The young man feels uneasy if he is not continually doing something to stir up his patient's internal arrangements. The old man takes things more quietly, and is much more willing to let well enough alone.

Medical Essays, "The Young Practitioner"

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ONE OF THE VITAL SIGNS OF ANXIOUS DEPRESSION: INSOMNIA

Others to look for:

agitation

anorexia

feelings of guilt
and worthlessness

fatigue

palpitations

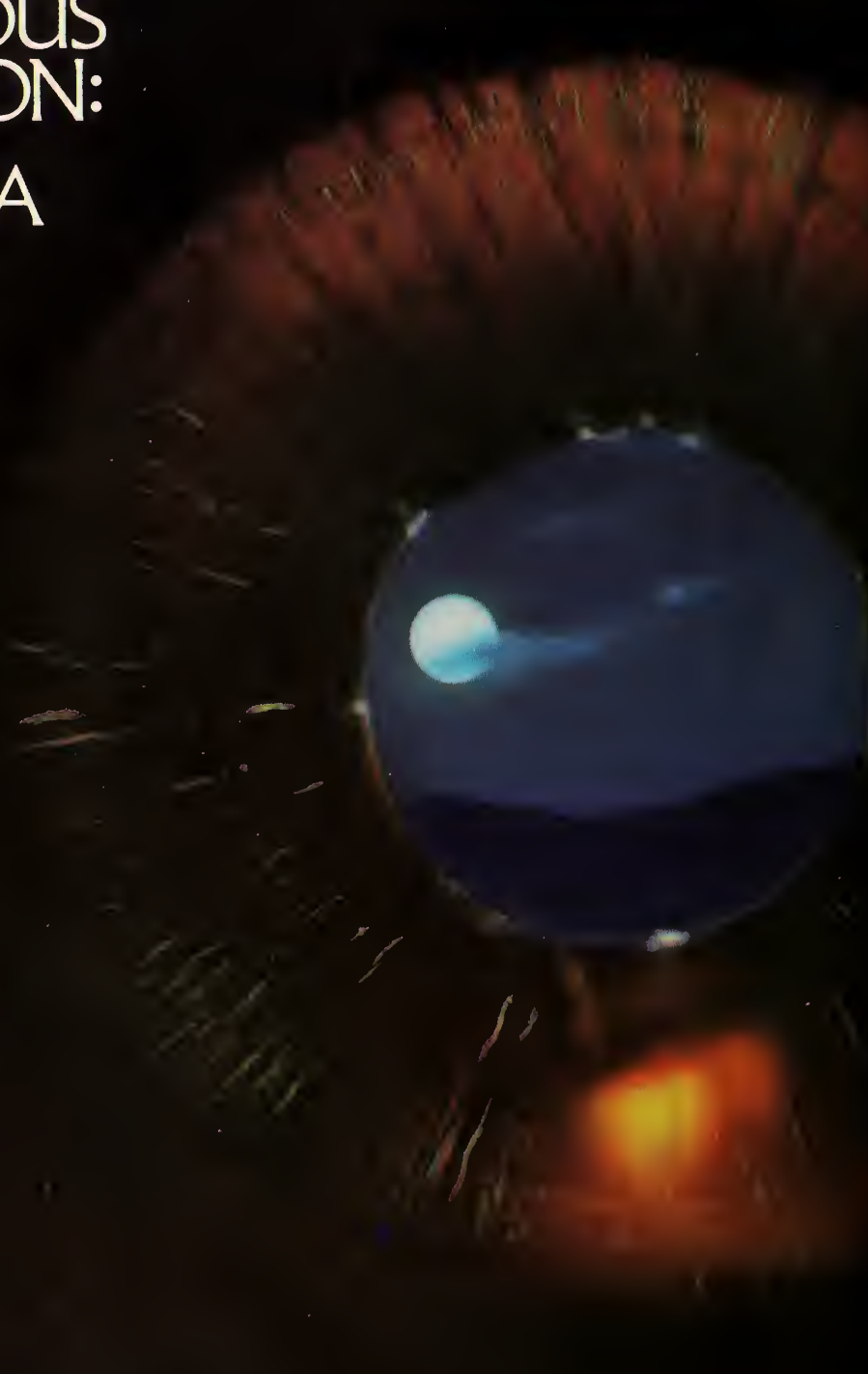
headache

vague aches
and pains

sadness

psychic and
somatic anxiety

Artist's conception,
looking out from the human eye
as conceived in a schematic model.



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Many patients respond readily to a single bedtime dose of Limbitrol, a convenient schedule that may enhance compliance and helps relieve the insomnia associated with anxious depression. Limbitrol also offers a choice of other regimens: t.i.d., or a divided dose with the larger portion h.s. In all cases, caution patients about the combined effects with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as driving or operating machinery.

in moderate depression and anxiety

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Tablets 5-12.5 each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline
(as the hydrochloride salt)

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(as the hydrochloride salt)

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Please see summary of complete product information on following page.

LIMBITROL® TABLETS Tranquilizer—Antidepressant

Before prescribing, please consult complete product information.

A summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving)

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies.

Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide)

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated. Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10, Prescription Paks of 50

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In the Public Health

Conjoint Report: The State of Public Health in North Carolina

Ronald H. Levine, M.D., M.P.H.
State Health Director

Introduction

It is indeed a pleasure to once again undertake this statutory obligation, a most appropriate one in my view, since your state health agency was, after all, created by the General Assembly in 1877 at the request of the North Carolina Medical Society. The 1982 report will, I hope, give the Society an overview of some of the accomplishments of the Division of Health Services and will single out for special emphasis the programs and services devoted to the control of communicable diseases in our state.

To begin, North Carolina's Neonatal Hypothyroidism Screening Program has been available statewide for more than a year. No fewer than fifteen babies with this disorder were discovered last year. By preventing the mental retardation associated with untreated or late-treated disease, we have served well the infants and families involved, not to speak of the considerable savings in state expenditures for institutionalization.

A \$1,250,000 capital expansion project was completed at our Lenox Baker Children's Hospital. This addition and renovation, along with the employment of a fulltime pediatrician, enables us to broaden the service spectrum at Lenox Baker from purely musculo-skeletal problems to the full range of long-term inpatient rehabilitative services for children.

Thanks to a special appropriation from the General Assembly, our agency has, for the first time, offered hospitalization and physician reimbursement for adults with hemophilia. This complements similar services already available for adults with cystic fibrosis.

As you are probably aware, legislation was finally passed in 1981 to require child restraints in motor vehicles. Our staff has assisted in the initiation of child safety seat loaner programs in five local health departments with 26 others in various stages of development.

Our Chronic Disease Program assists many North Carolinians with debilitating kidney failure. The pro-

gram emphasized home dialysis, allowing great cost savings and boosting patient morale. With home and center dialysis now widely available, we have more than 350 patients waiting for kidney transplants.

We know that community fluoridation can contribute up to 65% in the reduction of dental disease. Today, 107 water systems in North Carolina are adjusting the fluoride content of their water supplies to the optimal level of one part per million, serving 2,800,000 people. Only two communities in the state with a population of more than 10,000 have not yet fluoridated. In rural areas 52,000 children are receiving fluoridated water through school water fluoridators. This is one of the largest programs of this kind in the world.

Our state Center for Health Statistics has collected one entire year's hospital discharge data for North Carolina with the considerable support of the Hospital Association. We believe we have coverage of 95% of all inpatient service with such information as primary and secondary diagnoses, length of stay, source of payment, and socio-demographic characteristics. We hope to be able to generate significant statewide and area-specific morbidity information to physicians, hospitals, researchers, planners, and others.

Immunization Laws

I promised at the outset an in-depth review of communicable disease control matters, so let me begin with some recent major changes in our state's immunization laws. (See page 725 for an update on influenza vaccine recommendations.)

Prior to 1979 the North Carolina immunization law was interpreted as applying only to school children when they were first admitted to a public or private school — i.e., at the kindergarten or first grade level. As new vaccines became available to prevent the so-called "common diseases of childhood," immunization against diseases like measles and rubella were added to our law — measles in 1971 and rubella in 1977. However, children who were already in school when these revisions of the law went into effect escaped any systematic assurance that they were protected against these diseases. It should come as no surprise, then, to note that measles and rubella out-

Presented at the North Carolina Medical Society Annual Meeting in Pinehurst, N.C., on May 7, 1982.

breaks (affecting predominantly junior and senior high school age children) occurred in the late 1970s.

The 1979 rewrite of the state immunization law recognized this problem by requiring that all school children — from kindergarten through the twelfth grade — be immunized against diphtheria, pertussis, tetanus, poliomyelitis, measles, and rubella. It also extended immunization requirements to day care center children since protection of preschool children from vaccine-preventable diseases is obviously of even greater importance than initiation of immunizations at five or six years of age as a requirement for school entry.

Another important change in the immunization law enacted by the 1979 General Assembly was the addition of a requirement that those children who received measles vaccine before their first birthday be reimmunized. This change resulted from the observation that children who were immunized against rubella between nine and twelve months of age — as initially recommended at the time of live measles vaccine licensure in 1963 — had a substantially higher vaccine failure rate than children immunized after their first birthday. These children were teenagers in the late 1970s, and they too figured prominently in the measles outbreaks of those years.

The General Assembly wisely granted a year of preparation to the State's schools before enforcement of the new law for children above the kindergarten-first grade level. Thus, during the 1979-80 school year, public health and school officials across the state began the mammoth task of checking immunization records on all school children, the accomplishment of which has happily resulted in striking improvements in immunization levels. A 1978 random sample survey of students in grades two through twelve of public schools in the state showed that only 61% had adequate immunization records. In 1981, this level had reached 98%. As revealed by sample surveys of two year-olds in North Carolina, only 38% of children had received a minimally defined basic series of three doses each of DTP and OPV vaccines, measles vaccine, and rubella vaccine by their second birthday in 1972; by 1980 this percentage rose to 81%.

It should not be too surprising, then, that there has been a marked reduction in the incidence of vaccine-preventable diseases. New record lows were established for pertussis, measles, rubella, and mumps in 1981. The last North Carolina case of diphtheria occurred in 1974, tetanus remains a low-level problem of unimmunized older individuals in the state, and our most recent polio cases were vaccine-induced.

These achievements in disease prevention are not the work of one individual or even one group of people. Mention has already been made of the contributions of public health workers and school officials, but much of the credit also belongs to the private sector of medical practice. Those pediatricians, family/general practitioners, and internists who assisted in bringing "shot records" up to date deserve special recognition.

Foodborne Diseases

In contrast to the vaccine-preventable diseases, foodborne diseases — at least in the form of large outbreaks — were quite prominent during 1981. The explosive nature of some of these outbreaks was of such a magnitude that at least two counties, Buncombe and Randolph, had unplanned trials of their hospitals' emergency response plans.

The prevention of foodborne disease does not yield itself to the straightforward, unidirectional method utilized in preventing diseases susceptible to control through immunization. Problems in food hygiene can arise at many different steps in the human "food chain" from the farm to the table. Two 1981 examples will illustrate this point.

Almost 6,000 people purchased food at a fund-raising barbecue in early October in Franklin County. Febrile gastroenteritis developed in at least 112 individuals attending this event within one to two days, and both salmonella blockley and *S. infantis* were isolated from pork barbecue and the stools of ill individuals. In this situation contamination of cooked barbecue by the use of unwashed knives which had been used to cut up the raw pork was the likely cause of the outbreak; use of the same surfaces for processing of the raw and cooked pork may also have been important in the cause of this outbreak. The barbecue was kept warm, but not hot, overnight, a superb culture medium.

Pork is one of the leading sources of non-typhoid salmonellae, and the classical situation wherein cooked meat is recontaminated by contact with a surface or utensil used in the preparation of the raw meat is illustrated by this outbreak.

Another example is an outbreak of staphylococcal food intoxication that occurred in Buncombe County in July. Between 2 and 7½ hours after eating a meal at a conference center, approximately 278 people began experiencing nausea, vomiting, cramps, and diarrhea. Most recovered within a few hours, receiving only supportive therapy at emergency rooms in the area. Food history analysis implicated cooked ham, and, indeed, cultures of the ham yielded 119 million colonies per gram of an enterotoxin-producing staphylococcal aureus organism. Phage typing of this organism matched an isolate cultured from a purulent burn wound of the arm of a food handler who sliced the ham. The ham sat for two hours after slicing without adequate refrigeration.

In this example we have contamination of a food item by a human food handler rather than the food being inherently contaminated.

A common important contributory factor in both these outbreaks — and in many others — was the element of time. Most foods contaminated with an infectious agent — whether "staph." salmonella, clostridium perfringens or others will not produce illness in humans if they are eaten immediately after contamination. However, when they are allowed to sit at improper holding temperatures before consump-

tion, multiplication of organisms and/or elaboration of toxins set the stage for human illness.

Prevention of foodborne disease, as suggested by these abbreviated outbreak reports, depends to the greatest extent upon the practices of food handlers. Quarterly inspections of restaurants by local health departments is a time-honored program in North Carolina, but many of our departments have come to recognize the importance of food handler education as well. There are problems in trying to do this, not the least of which is the transient nature of many workers in the food industry. However difficult the task, attention to the need for food handler knowledge in prevention of foodborne disease is a must. (See January 1982 NORTH CAROLINA MEDICAL JOURNAL: Health Examination of Food Handlers—Europe.)

Rocky Mountain Spotted Fever

Rocky Mountain spotted fever (See August 1982 NORTH CAROLINA MEDICAL JOURNAL, page 593, for national and local statistics on Rocky Mountain spotted fever.) was another prominent North Carolina disease in 1981. Our state has led the nation in the number of reported cases of this tick-borne rickettsial infection since 1970 to the extent that, in 1980, North Carolina reported 27.6% of the total U.S. cases—321 of 1,163. It should be recognized that our state is not an "island" of activity for this disease but that we occupy the center of a belt of Rocky Mountain spotted fever that involves the mid- and southern Atlantic states.

The reported incidence of this disease in North Carolina increased fairly steadily during the 1970s, and the rate of 5.6 cases per 100,000 in 1980 established a new high for the state.

The reported rate for 1981 was slightly lower than the 1980 rate, and there were six deaths attributed to this disease in 1981 compared with the 17 recorded for 1980.

As with foodborne disease, prevention of Rocky Mountain spotted fever is not simple. Vaccines have been developed, licensed, and used in this country on two occasions. Neither has given satisfactory immunity to those receiving the vaccine, and currently there is no licensed vaccine available. Even the experimental vaccine being studied does not hold much promise, for 12 to 16 human volunteers who received this vaccine in a recent University of Maryland study developed Rocky Mountain spotted fever when challenged with intradermally injected live *R. rickettsii* organisms.

There are, of course, precautions people can take to avoid contracting Rocky Mountain spotted fever. These include staying out of tick-infested areas, the use of tick repellents, using tick collars for dogs and cats, the use of pesticides in selected situations, and — perhaps most importantly — frequent checking for and removal of crawling or attached ticks whenever there has been possible exposure to these eight-legged creatures.

The problem that primarily confronts the physician, however, is one of prevention of serious morbidity

or mortality from this disease. One national study of the early 1970s suggested that fatal cases of Rocky Mountain spotted fever are more likely to occur because the attending physician delays appropriate antibiotic treatment than because the patient delays seeking medical attention. There is suggestive evidence from a more recent study in two North Carolina counties that this may not be as true in this state as it might be elsewhere. Nonetheless, fatal cases of this disease continue to occur here and will probably continue to occur so long as there is no really adequate primary prevention tool for this disease. Many cases present atypically, and the physician has a limited armamentarium of diagnostic aids to call upon at the time the decision to treat or not to treat should be made. There are new serologic techniques such as the indirect hemagglutination test now available from our agency's laboratory which indicate the presence of specific antibodies in a patient's serum within six to seven days of illness onset. That is not as quick as we would like it to be, however, so there is also the availability at some medical centers in North Carolina of a direct immunofluorescence test which can be performed on a skin biopsy from a patient's rash. If this test is positive, one has confirmation of the diagnosis; if the test is negative, the patient might still have Rocky Mountain spotted fever. The physician must then still rely upon his or her clinical judgment in diagnosing this disease in its early stages.

Rabies

Finally, a situation that gravely concerns us is the reappearance of wildlife rabies in western North Carolina. During the past few weeks, seven skunks (five Watauga County, two Ashe County) have been confirmed in our laboratory as having rabies. This finding is of particular significance since our state has been virtually free of rabies for the past 10 to 15 years, except in our bat population.

The current outbreak of skunk rabies in Ashe and Watauga counties is an extension of an epidemic in eastern Tennessee. All of our mountain counties and most of our western Piedmont counties have a fairly heavy population of skunks. During the next several years, rabies virus will most probably penetrate the native skunk population throughout our western counties.

The greatest risk to our human population is not from the rabid skunks per se, but rather via our domestic dog and cat population. Dogs and cats are the animals with which people have the most contact and therefore the animal most likely to transmit rabies virus. North Carolina law requires dogs to be immunized against rabies but there is no immunization requirement for cats except by a few counties (Alamance, Forsyth, Craven, Onslow, and Wake) and cities (Charlotte and Chapel Hill) which have such ordinances. Cats and dogs are equally capable of transmitting rabies virus, and we have long felt that the immunization of cats against rabies is a sound public health practice. The Wake County Medical So-

ciety has adopted and forwarded to the State Society a resolution that addresses the need to require rabies immunization of our cat population. Such a statewide requirement would greatly enhance our ability to protect people against infection with rabies virus. (The House of Delegates did pass the resolution.)

Conclusion

A study of our accomplishments as well as our problems yields a persistent, irrefutable truth: Pro-

ductive efforts in public health involve a cooperative effort between the state and/or local health department and the private sector of medicine. I continue to be convinced that this collaborative relationship will be stronger than ever in the months and years to come to the great and lasting benefit of our North Carolina citizens' health and well-being.

HENRY E. SIGERIST [1891-1957]

The task of medicine is to promote health, to prevent disease, to treat the sick when prevention has broken down and to rehabilitate the people after they have been cured. These are highly social functions and we must look at medicine as basically a social science.

Civilization and Disease, Ch. 12



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From the Desk of the Managing Editor

This month begins a series of articles on the economic issues which impact on organized medicine. The first article, "Health Care Coalitions," reports on the development at the national, state, and local levels of one alternative to the problem of rising health care costs. The series will present discussion on the issues from the North Carolina perspective and commentary from other parts of the country. The JOURNAL offers this as a forum for debate and encourages comment from you, the reader, through letters and editorials.

—AAH

HEALTH CARE COALITIONS

American Medical Association

In a period when the economy in general is creating growing national concerns, the rising costs of medical care are a focus of attention for the medical profession and for many other groups — business, insurers, hospitals, labor, consumers, and government. Our country is reviewing and reassessing private and public policies on costs, planning, and delivery of health care.

It is a time when all must share in the responsibility for finding solutions. And these solutions must be developed locally to deal with unique local problems. A relatively new type of group — the health care coalition — is coming to the fore as a promising voluntary organization to deal with health care problems on a local, regional, or state basis.

At the national level, the AMA has joined with the American Hospital Association, the Blue Cross and Blue Shield Associations, the Business Roundtable, the Health Insurance Association of America, and the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) to endorse the concept of voluntary coalitions. Members of the national groups have agreed also to encourage members and local affiliates to participate together in such coalitions.

For the AMA, supporting the development of health care coalitions is a natural extension of its activities over the past three years in developing contacts at the national level with business and industry groups. The AMA has also encouraged state and local medical groups to establish dialogues with businesses and industries in their areas to discuss common concerns about health care delivery.

Within the federation of medicine, both state associations and county societies have pursued the initiation of medicine-business coalitions. About 46 medicine-business coalitions are in operation or in

development stages. Others are being discussed. In many states where state associations have not established coalitions, they have initiated meetings with business, and frequently they have included other providers. Most state medical associations see their roles as catalysts for county-level coalitions, and many have sponsored programs and prepared technical assistance materials for county groups.

The AMA believes that these coalitions have the promise of being *the most effective mechanisms* for containing health care costs. Even though a local coalition of providers, insurers, business, and labor may not necessarily develop new cost-effectiveness ideas, it can create a better base of support for implementation of effective programs. For example, the medical community has long supported such policies as the elimination of nonemergency, weekend hospital admissions; increased preadmission testing; and greater use of outpatient services, such as ambulatory surgical centers, when medically appropriate. Endorsement of these policies and cooperative action by employers who furnish health insurance and by labor unions who bargain for benefits can make implementation of these policies a reality.

The AMA believes it is imperative that health care coalitions have physician participation so that primary emphasis is given to *quality* and *availability* of medical care and *access* to it, as well as to cost effectiveness and cost containment.

Recommendation of the Immunization Practices Advisory Committee (ACIP)

INFLUENZA VACCINES 1982-1983

This revision of the influenza vaccine recommendations updates information on influenza activity in the United States for the 1981-1982 influenza season (superseding MMWR 1981;30:279-88) and provides information on the vaccine to be available for the 1982-1983 influenza season.

Introduction

Influenza virus infections occur every year in the United States but vary greatly in incidence and geographic distribution. Infections may be asymptomatic, or they may produce a spectrum of manifestations ranging from mild upper-respiratory infection to pneumonia and death. Influenza A and B viruses are responsible for only a small proportion of all respiratory disease, but they are unique in their ability to cause periodic widespread outbreaks of febrile respiratory illness among adults and children.

Influenza epidemics are frequently associated with deaths in excess of the number normally expected. More than 200,000 excess deaths are estimated to have occurred in association with influenza epidemics in the United States during 1968-1981. Excess deaths in this period were attributable mainly to influenza A viruses, although influenza B epidemics were occasionally associated with excess deaths, as in 1979-1980. Epidemics of influenza B, and to a lesser extent of influenza A, infection have been associated with an increased incidence of Reye syndrome among children and adolescents in the United States.

Efforts to reduce the impact of influenza in the United States have been aimed at protecting persons at greatest risk of serious illness or death. Observations during influenza epidemics indicate that most influenza-related deaths occurred among chronically ill children and adults and older persons, especially those > 65 years old. Annual vaccination is therefore recommended for these medically high-risk persons.

Influenza A viruses are classified into subtypes on the basis of 2 antigens: hemagglutinin (H) and neuraminidase (N). Three subtypes of hemagglutinin (H1, H2, H3) and 2 subtypes of neuraminidase (N1, N2) are recognized among influenza A viruses that have caused widespread human disease. Immunity to these antigens, especially hemagglutinin, reduces the likelihood of infection and the severity of disease if a person does become infected. However, there may be sufficient antigenic variation (antigenic drift) within the same subtype over time so that infection or vaccination with one strain may not induce immunity to distantly related strains. Although influenza B viruses have shown much more antigenic stability than influenza A viruses, antigenic variation does occur. As a consequence, the characteristics of antigenic properties of current strains provide the basis for selecting virus strain(s) to be included in the vaccine.

During the 1981-1982 winter, influenza activity was generally low in the United States, with no apparent peaks of excess mortality. Less than half the usual number of virus isolates were reported to CDC. In many states, influenza B viruses were shown to be the cause of localized outbreaks among school-age children. Several nursing-home outbreaks, some with associated mortality, were also confirmed to be caused by influenza B viruses. The strains of virus isolated were closely related antigenically to B/Singapore/222/79. Sporadic illnesses and a few focal outbreaks caused by influenza A(H1N1) viruses also occurred among children and young adults, but these viruses were less prevalent than influenza B. Influenza A(H1N1) isolates were, as in 1980-1981, similar to A/England/333/80, which can be shown by laboratory tests to be slightly different from A/Brazil/11/78, the current vaccine strain. Measurement of antibody responses of persons receiving vaccines containing A/Brazil/11/78 antigen, however, indicates that these vaccines should protect against A/England/333/80-like H1N1 strains. Most information about strains of influenza A(H3N2) likely to be prevalent in 1982-1983 is

derived from reports and analyses of viruses isolated in 1981 in Asia. There was little circulation of H3N2 strains in the Americas or Europe during the 1981-1982 influenza season. In 1981, most influenza A(H3N2) virus isolates from Asia and the Southern Hemisphere were similar to strains circulating previously. Some additional variants were identified, but they did not become predominant at any time during the year or appear to cause any epidemics.

Influenza Vaccines for 1982-1983

The specific antigens and their potency in the vaccine will be the same as in 1981-1982: 15 μ g each of hemagglutinin of A/Brazil/78(H1N1), A/Bangkok/79 (H3N2), and B/Singapore/79 viruses per 0.5-ml dose.

Adults and children \geq 13 years old will require only one dose. Children < 13 years old are less likely than older children or adults to have been previously infected with strains related to each of the vaccine components. Therefore, because of their potentially lower level of immunologic priming, children in the < 13-year age group should receive two doses of vaccine. However, children who have already had at least one of the influenza vaccines recommended for use from 1978 to 1982 will require only one dose of the 1982-1983 vaccine. The 1982-1983 vaccines will be available as whole-virion (whole-virus) and sub-virion (split-virus) preparations. Past data indicate that split-virus vaccines have been associated with somewhat fewer side effects than whole-virus vaccines among children. Thus, only split-virus vaccines are recommended for persons < 13 years old.

Vaccine Usage

General Recommendations

Annual vaccination is strongly recommended:

1. For all persons (children and adults) who are at increased risk of adverse consequences from infections of the lower respiratory tract because of a pre-existing medical condition. Conditions predisposing to such increased risk include:
 - a) Acquired or congenital heart disease with actual or potentially altered circulatory dynamics (e.g., mitral stenosis, congestive heart failure, or pulmonary vascular overload).
 - b) Any chronic disorder or condition that compromises pulmonary function (e.g., chronic obstructive pulmonary disease, bronchiectasis, heavy smoking, tuberculosis, severe asthma, cystic fibrosis, neuromuscular and orthopedic disorders with impaired ventilation, residual pulmonary dysplasia following the neonatal respiratory distress syndrome).
 - c) Chronic renal disease with azotemia or nephrotic syndrome.
 - d) Diabetes mellitus or other metabolic diseases that increase the risk that infections will be more severe than for persons without such conditions.

- e) Chronic, severe anemia, such as sickle cell disease.
 - f) Conditions that compromise the immune mechanism, including certain malignancies and immunosuppressive therapy.
- For all older persons, particularly those > 65 years old, because the risk of death during influenza outbreaks generally increases with age.

In balancing the benefits, risks, and costs for the community, some localities have elected to vaccinate persons who provide essential community services and medical-care personnel who also are at increased risk of exposure. Uniform recommendations cannot be made in this regard. However, vaccination programs for groups who provide community services should not take precedence over vaccination of persons specified to be at high risk.

Table 1 summarizes vaccine and dosage recommendations by age group for 1982-1983.

Age group	Product	Dosage	Number of doses
≥ 13 years	Whole virion (whole virus) or sub-virion (split virus)	0.5 ml	1
3-12 years	Sub-virion (split virus)	0.5 ml	2†
6-35 months	Sub-virion (split virus)	0.25 ml‡	2†

*Contains 15 µg each of A/Brazil/78(H1N1), A/Bangkok/79(H3N2), and B/Singapore/79 hemagglutinin antigens in each 0.5 ml.

†Four weeks or more between doses; both doses recommended for good protection. However, if the individual received at least one dose of any influenza vaccine recommended from 1978-79 to 1981-82, one dose is sufficient.

‡Based on limited data. Since the likelihood of febrile convulsions is greater for this age group, special care should be taken in weighing relative risks and benefits.

Use in Pregnancy

Physicians should evaluate a pregnant woman's need for influenza vaccination on the same basis used for other persons; that is, vaccination should be advised for a pregnant woman who has any underlying high-risk condition. Only in the pandemics of 1918-1919 and 1957-1958 was there persuasive evidence that influenza infection increased maternal mortality.

There is no evidence to suggest that influenza vaccine carries any maternal or fetal risk, and, because it is inactivated, the vaccine does not share any of the theoretical risks of live-virus-vaccine infection of the fetus. Nonetheless, when vaccine is to be given in pregnancy, waiting until the second or third trimester is a reasonable precaution to minimize any concern over teratogenicity.

Side Effects and Adverse Reactions

Vaccines used in recent years have generally been associated with only a few reactions; less than one-third of vaccinees have been reported to have local redness and induration for one or two days at the site of injection.

Systemic reactions have been of three types:

1. Fever, malaise, myalgia, and other systemic symptoms of toxicity, although infrequent, most often affect children and others who have had no experience with the influenza virus antigens contained in the vaccine. These reactions, which begin 6-12 hours after vaccination and persist 1-2 days, are usually attributed to the influenza virus itself (even though it is inactivated) and constitute most of the side effects of influenza vaccination.

2. Immediate, presumably allergic, responses such as flare and wheal or various respiratory expressions of hypersensitivity occur extremely rarely after influenza vaccination. They probably result from sensitivity to some vaccine component — most likely residual egg protein. Although current influenza vaccines contain only a small quantity of egg protein, on rare occasions they can induce hypersensitivity reactions. Individuals with anaphylactic hypersensitivity to eggs should not be given influenza vaccine. This would include persons who, on eating eggs, develop swelling of the lips or tongue or experience acute respiratory distress or collapse.

3. In 1976, a temporal association (i.e., within 10 weeks of vaccination) was noted between Guillain-Barré syndrome (GBS) and administration of A/New Jersey/76 (swine) influenza vaccine. Vaccinated adults had an excess frequency of GBS at the rate of approximately 10 cases/1 million persons vaccinated. This incidence of GBS was 5-6 times higher than the comparable average reported incidence for unvaccinated persons. An active surveillance system for GBS was initiated in 1978 and was maintained for three years. No significant excess risk of GBS was found for recipients of influenza vaccine. Available evidence indicates that any risk of GBS from influenza vaccine appears to be far lower than the risks associated with influenza among persons for whom the vaccine is indicated.

Supplementary Measures

Annual vaccination continues to be the most important way to prevent influenza and should be routine for all persons at high risk of serious and/or fatal disease. Supplementary measures intended to reduce the likelihood of exposure in community outbreaks, such as limiting the number of gatherings of large groups, may delay spread but are not uniformly effective.

Amantadine hydrochloride, an antiviral drug, can play a supplementary role in helping prevent influenza A for certain persons and circumscribed groups. It is not a substitute for vaccine and not generally applicable to public health practice, but it may be useful for persons who need protection but have not been vaccinated.

Amantadine protects only against influenza A, not influenza B, infection and must be taken each day for the duration of the epidemic (6-8 weeks, generally) or until active immunity can be expected to develop (about 10-14 days after vaccination). Precautions must

be taken for patients with certain chronic conditions, and there are sometimes mild but occasionally troublesome side effects — especially among older patients. Amantadine, a prescription drug, must be ordered and monitored by a physician. Dosage, precautions, and other information on use are specified in the drug's labeling.

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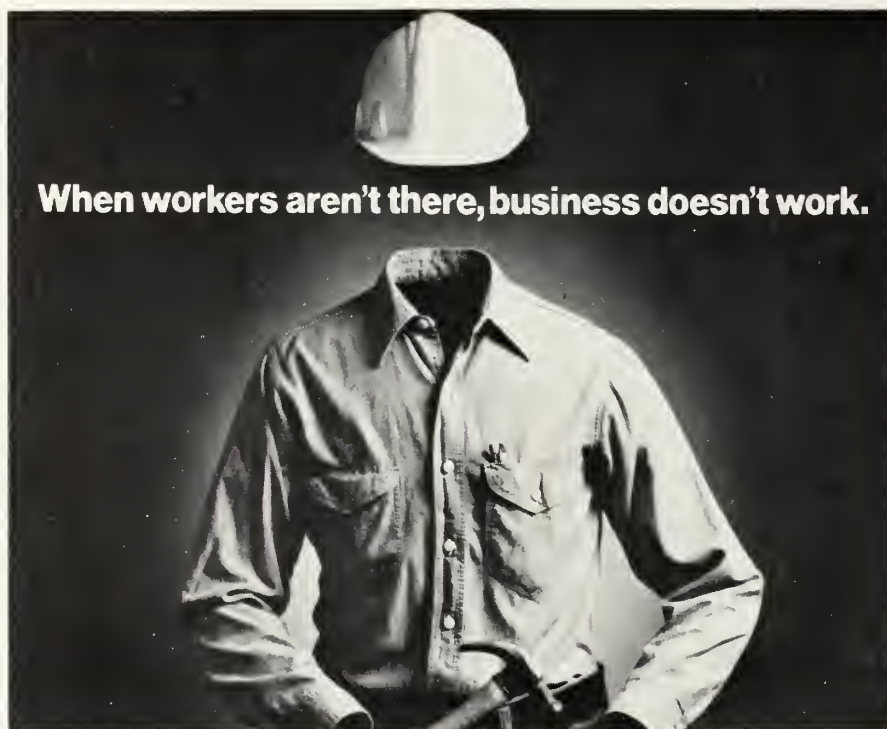
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Reprinted from the Morbidity and Mortality Weekly Report, Vol. 31, No. 26.

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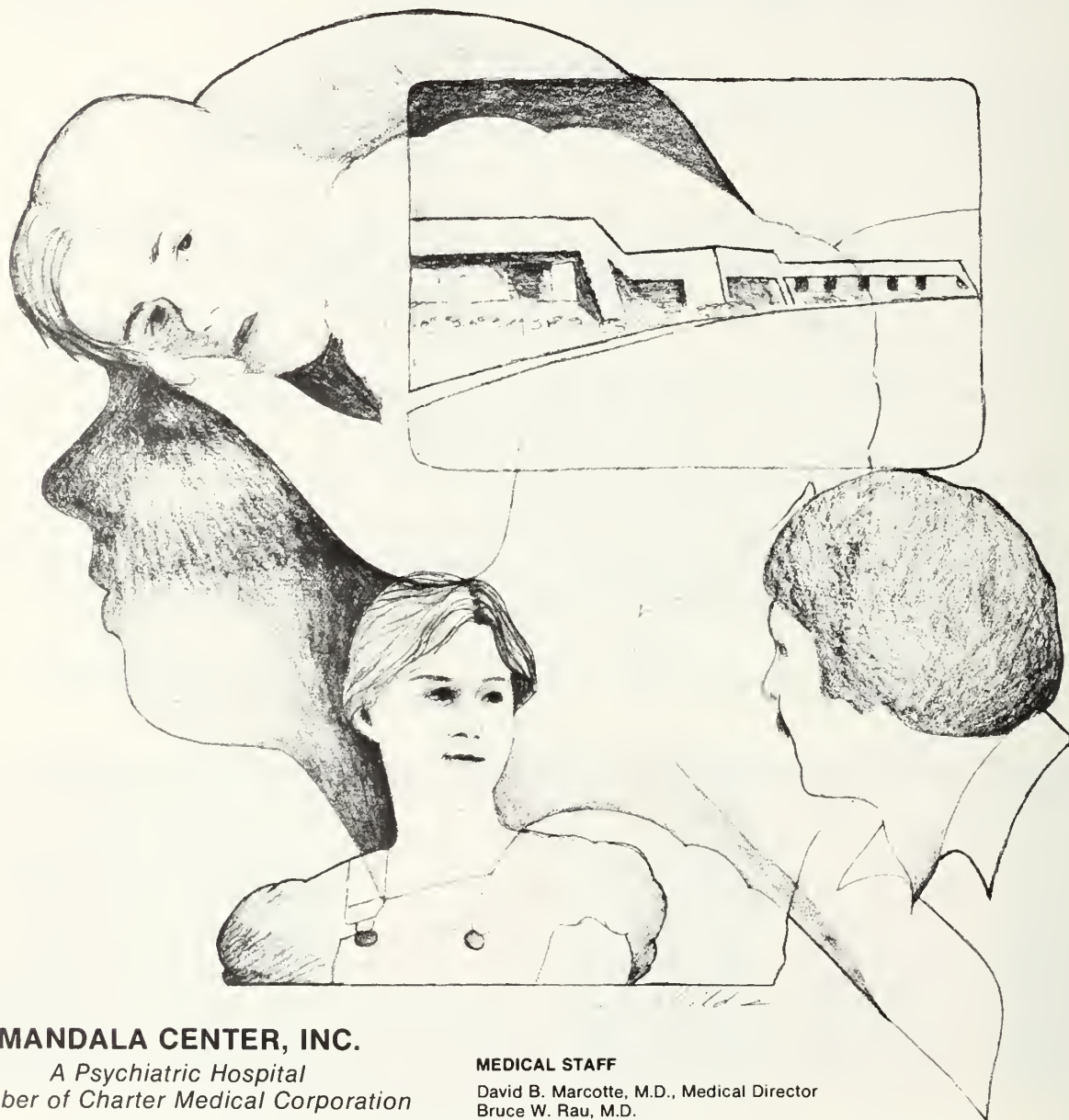
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In State

October 15

"Psychopharmacology Update: New Approaches-New Horizons"

Place: Asheville

Fee: \$80

Credit: 7 hours

Info: Forrest L. Smith, Executive Director, CME in Psychiatry, Box 3253, Duke University Medical Center, Durham, NC 27710, 919-684-5050

October 20

"Calcium Channel Blockers"

Place: Sanford

Fee: —0—

Credit: 2 hours, AAFP applied for

Info: R. S. Cline, M.D., Dir. of Cont. Med. Ed., Central Carolina Hospital, 1135 Carthage St., Sanford, NC 27330, 919-774-4100

October 22-23

"Cancer and Nutrition: The 15th Annual Malignant Disease Symposium"

Place: Chapel Hill

Fee: \$125

Credit: 13 hours

Info: Mimi Minkoff, Cancer Research Center, Box 30, MacNider Building, Chapel Hill, NC 27514, 919-966-3036

October 27

"Calcium Antagonists: A New Era of Therapy for Cardiovascular Diseases"

Place: Greenville

Fee: \$50

Credit: 6 hours, AMA Category I and AAFP

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

October 28-31

"Annual Meeting and Scientific Program of the NC Neuropsychiatric Association"

Place: Asheville

Fee: \$70 (members)

Credit: 14-15½ hours applied for

Info: Ms. Jerry H. Nance, Executive Secretary, NC Neuropsychiatric Association, 419 Dickson Mill Road, Durham, NC 27705

November 3-5

"Recent Advances in Applied Echocardiography"

Place: Winston-Salem

Fee: \$300

Credit: 24 hours

Info: Postgraduate Course in Medical Sonics, 300 S. Hawthorne Rd., Winston-Salem, NC 27103, 919-748-4505

November 10

"Developmental Disability in the Neonate and Infant: Causes and Rehabilitation"

Place: Greenville

Fee: \$25

Credit: 3 hours, AMA Category I and AAFP

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

November 18-20

"Comprehensive Breast Disease Symposium"

Place: Winston-Salem

Credit: 20 hours

Info: Postgraduate course in Medical Sonics, 300 S. Hawthorne Rd., Winston-Salem, NC 27103, 919-748-4505

December 3-4

"Renal Dysfunctions and Hypertensive Disorders in Pregnancy"

Place: Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

January 12

"The Investigation of Sudden Death — Beginning at the Scene"

Place: Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

January 22

"Fourth Annual Pulmonary Disease Update"

Place: Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

Out-of-State**October 25-29**

"Dermatology for Non-Dermatologists"

Place: Bermuda

Fee: \$325

Credit: 14 hours, AMA Category I and AAFP

Info: "Dermatology for Non-Dermatologists," PO Box 2987, Duke Medical Center, Durham, NC 27710, 919-684-2504

October 30-November 2

"76th Annual Scientific Assembly"

Place: Atlanta, GA

Info: Southern Medical Association, PO Box 2446, Birmingham, Ala 35201, 205-323-4400

November 4-7

"Current Controversies in Adult and Pediatric Urology"

Place: Chicago, Ill

Credit: 33 hours

Info: Linda Mace, PO Box 3707, Duke Medical Center, Durham, NC 27710

November 12-14

"Cardiology in the Aging"

Place: Johnson City, TN

Info: Floyd B. Goffin, M.D., Assistant Dean, Department of Continuing Medical Education, Box 19660A, Quillen Dishner College of Medicine, East Tennessee State University, Johnson City, TN 37614, 615-928-6426

November 16-17

"Ellis Orthopaedic Lectureship"

Place: Johnson City, TN

Info: Floyd B. Goffin, M.D., Assistant Dean, Department of Continuing Medical Education, Box 19660A, Quillen Dishner College of Medicine, East Tennessee State University, Johnson City, TN 37614, 615-928-6426

December 6-10

"IV International Symposium in Perinatology,"

"III Course in Perinatal Medicine"

Place: Mexico

Info: Continuing Medical Education Unit, Montes Urales 800, Lomas Virreyes, Deleg. Miguel Hidalgo, 11000-Mexico, D.F.

January

"Forensic Medicine"

Place: Johnston City, TN

Info: Floyd B. Goffin, M.D., CME Dept., Box 19660A, Quillen Dishner College of Medicine, East Tennessee State University, Johnson City, TN 37614, 615-928-6426

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North Carolina Medical Society Auxiliary

Inaugural Address May 7, 1982

After Ann the first, Ann the second, and Anne the third, the medical auxiliary now has Eleanor of Aquitaine. I hasten to add that I don't intend to be "Queen" — I also don't intend to be upset if you call me Anne once in awhile, because I have newfound admiration for all of my predecessors. Our newest past president, Anne Hubbard, has gone the farthest mile for this organization and has given us outstanding leadership throughout the year.

I am honored to be a new link in the golden chain of women who have led this auxiliary. I am here as your new president because I have found doctors' wives very special and because of enormous personal empathy with their lives as physicians' partners. We have been "kindred" since my own husband embarked the two of us on this journey 35 years ago as medical student and medical student's wife.

A familiar excerpt from *Alice's Adventures in Wonderland* reads: "Would you tell me, please, which way I ought to go from here. . . ." "That depends a good deal on where you want to get to" said the Cat. "I don't much care where, . . ." said Alice. "Then it doesn't matter which way you go" said the Cat. For the North Carolina Medical Society Auxiliary it matters very much which way we go in this 59th year. We can't afford to drift here and there.

The theme for our year together is designed to suggest new directions through an "Emphasis on Commitment." All of us have commitments already — as women, wives, mothers, anchors in our medical families. The medical auxiliary has survived and grown because women before us have reached out beyond these, to other commitments.

Last year the Texas Medical Auxiliary questioned a group of young medical wives. These women reported that they were very "turned off" when they heard that they are expected to do certain things because they are doctors' wives, or that they are "lucky" to be married to doctors. Well — they are doctors' wives. Through experience with one another and the shared commitment to the medical auxiliary, we can help these young wives and ourselves recognize the positive aspects of this medical partnership.

The medical auxiliary provides a reason to come together and opportunities for accomplishment and service. Therefore, I ask you to make three specific commitments. The first of these is to please help to renew your organization. Place a high priority on your personal involvement in the auxiliary. Then, make a contract with me to bring one person who has never been (or not in a long time) to a state or county auxiliary meeting.

Our second commitment will be to plan and be involved with programs in your counties to strengthen all families — our medical families, young families and troubled families. The new president's program to be presented at this meeting will prepare us for this emphasis. It will also include ways to develop capable young people and help them make good life choices.

In response to a growing problem, we are exploring what the auxiliary can do to help get young drunken drivers off N.C. highways. With our extensive network of concerned women across the state, we might just help produce real solutions to this health hazard.

The fall state auxiliary meeting will include programs about legal drug abuse and home health care. These things affect family life and are subjects about which we should be informed.

The third commitment that I want to emphasize is twofold: first, we must actively assist the N.C. Medical Society in lobbying for appropriate health legislation. And, second, we will try to increase the Medical Auxiliary Student Loan Fund for N.C. medical students in North Carolina universities.

These suggestions are "sign posts" for our year together. In the end you will implement what appeals to you and what is needed in your community and in your auxiliary.

As a volunteer, the doctor's wife gives with a generous spirit and amazing energy. Within her sphere of influence she really wants to help make the world a better and happier place. We plot and plan under the umbrella of the medical auxiliary in order to be more effective.

Together, we can broaden the medical auxiliary's tradition of service. Our strength is our commitment to one another.

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News Notes

East Carolina University School of Medicine

Dr. R. William McConnell, clinical professor of radiology, has been appointed to a two-year term on the Medical Radiation Advisory Committee of the Food and Drug Administration. The committee is responsible for developing a program to reduce the public's exposure to X-rays and for finding more effective uses of X-rays in medicine.

The School of Medicine and Pitt County Memorial Hospital have accepted 36 new residents into the postgraduate training program at the medical center.

The new physicians received their medical degrees from 17 schools across the country. Ten of the doctors are ECU medical school graduates.

Fourteen of the residents are specializing in family medicine, the largest of the six residency programs. Eight physicians are specializing in medicine, two in obstetrics and gynecology, and four each in pediatrics, psychiatry and surgery.

The medical center now has a total of 93 residents in the postgraduate program.

Dr. M. Evelyn McNeill, associate professor of anatomy, has published a chapter in the book entitled *The Pineal Gland and Its Hormones*. McNeill's chapter, "Membranous Structures in Pinealocytes of the Chinese Hamster (*Cricetulus griseus*): Are they Annulate Lamellae?," was co-authored by Carlton P. Smith Jr., research technician. The book is edited by R. J. Reiter and published by Alan R. Liss, Inc., N.Y.

Department of Pediatrics members Dr. Sudesh Kataria, assistant professor, and Dr. Theodore Kushnick, professor and director of the Developmental Evaluation Clinic, co-authored a paper entitled "Short-Rib Polydactyly Dwarfism: Saldino Noonan Type" which appears in the July issue of the *American Journal of Diseases of Children*.

Dr. Charles G. Rob, professor of surgery, presented two papers at the University of Minnesota, Minneapolis during June. Rob's presentations included "Venous Ulcer" and "Management of Abdominal Aortic Aneurysm."

Assistant Professor of Pediatrics Dr. Kathleen Rao, director of the cytogenetics laboratory, co-authored an article which appears in a recent issue of *Ex-*

perimental Cell Research. The article examines the "Sequential Staining with Hoechst 33258 and Quinacrine Mustard for the Identification of Human Chromosomes in Somatic Cell Hybrids."

Three faculty members at the School of Medicine recently collaborated on a paper which appears in the May issue of *Infection and Immunity*. The article, entitled "Experimental Otitis Media in Gerbils and Chinchillas with *Streptococcus pneumoniae*, *Haemophilus influenzae*, and other Aerobic and Anaerobic Bacteria," was co-authored by Dr. Robert S. Fulghum, associate professor of microbiology, Dr. Jack E. Brinn Jr., associate professor of anatomy, and Dr. A. Mason Smith, associate professor of microbiology.

Dr. Dennis A. Revicki, instructor and research coordinator in the Department of Family Medicine, published a paper in the summer issue of *Educational Evaluation and Policy Analysis*. The paper is "A Model for Assessing the Degree of Implementation in Field-Based Educational Programs."

An article appearing in the July issue of the *Annals of Emergency Medicine* was co-authored by Dr. E. Jackson Allison Jr., associate professor and chairman of the Department of Emergency Medicine. The article is titled "The Esophageal Obturator Airway: A Re-assessment of Use by Paramedics."

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Dr. Janice Daugherty, instructor of family medicine, Presented "Self-Assessed Competence in Obstetrics and Gynecology: A Curriculum Development Tool for Residency" at the annual Fellows' Symposium held at the University of North Carolina-Chapel Hill on June 9.

Dr. Paul D. Mozley, professor of obstetrics and gynecology, has been appointed to the Psychiatry and Law Committee of the N.C. Neuropsychiatry Association. Mozley also was appointed to the steering committee for the American Society for Psychosomatic Obstetrics and Gynecology.

"Effect of Training on Muscle Protein Turnover in Male and Female Rats" is a paper that appeared in the April issue of *Biomedical Medicine*. The paper was written by Department of Biochemistry members Edward B. Tapscott Jr., research technician, Dr. George J. Kasperek, associate professor, and Dr. G. Lynis Dohm, associate professor.

Dr. Jarrett Barnhill Jr., assistant professor of psychiatric medicine, has received a \$10,137 residency training grant from the National Institute of Mental Health.

Dr. Edwin W. Monroe, associate dean of the School of Medicine and executive director of the Eastern Area Health Education Center, has been appointed to the advisory board of the Kate B. Reynolds Health Care Trust. The 11-member board meets twice a year to consider grant requests and make recommendations to the foundation's trustees.

**University of N.C.
School of Medicine &
N.C. Memorial Hospital**

The National Institutes of Health has selected the University of North Carolina at Chapel Hill to establish and maintain the nation's newest multipurpose arthritis center.

The facility, the only new one funded by NIH this year, will be the only federally designated arthritis center south of Baltimore and east of Birmingham.

It will be supported initially by a three-year \$722,000 grant, effective July 1, from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases.

Dr. John D. Winfield, professor of medicine and chief of the division of rheumatology and immunology, will serve as director of the center.

Winfield said the University was selected from among many institutions across the United States that applied for federal support because of the reputation of its schools of medicine, nursing and public health

and because of the extensive experience its faculty members have had with the illness.

"We will continue to approach the problem of arthritis from a variety of angles, but now we will have the resources to expand our efforts," he said. "These include more basic research into the causes and treatment of arthritis, broader educational programs directed at health professionals and arthritis patients."

Other missions of the center will be to develop and study innovative forms of arthritis care, to explore health policy issues and to evaluate center activities to determine their merit and general applicability.

The National Arthritis Act stimulated increased governmental interest in the illness and provided for centers of expertise around the United States when it was passed by the Congress in 1974. There are now 20 multipurpose arthritis centers.

The Comprehensive Hemophilia Diagnostic and Treatment Center recently sponsored two educational events designed to reach a wide range of health professionals as well as the general public.

A special one-day conference on "Treatment of Hemophiliacs with Antifactor VIII Antibodies" was held June 18 at the Hotel Europa in Chapel Hill. The program was co-sponsored by the Center for Thrombosis and Hemostasis and supported by Hyland Therapeutics Division of Travenol Laboratories, Inc.

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Faculty members participating included: Drs. Campbell McMillan, professor of pediatrics, Philip Blatt, associate professor of medicine and director of the Comprehensive Hemophilia Diagnostic and Treatment Center, Harold Roberts, professor of medicine and director of the Center for Thrombosis and Hemostasis, William Webster, professor of dental ecology and pathology and Gilbert White III, assistant professor of medicine.

June 25 marked the premiere of the center's new slide tape show on hemophilia titled, "It's A Whole New Ballgame."

Health and medicine writers from newspapers and television stations across the state attended a symposium on "Medicine and Health 1982" hosted by the School of Medicine and North Carolina Memorial Hospital June 15 and 16 at the Quail Roost Conference Center.

The symposium was organized by the Office of Medical Center Public Affairs to stimulate interest in health and medical reporting, to provide journalists with useful information on timely topics in medical science and to give them an opportunity to meet informally with members of the medical center administration and faculty.

Drs. Phillip J. Bassford and Myron S. Cohen are co-winners of the 1982-83 Jefferson-Pilot Fellowship in Academic Medicine.

Bassford, an assistant professor of bacteriology and immunology, received his undergraduate degree from Virginia Polytechnic Institute and his Ph.D. from the University of Virginia in 1977. Prior to coming to the University of North Carolina, Bassford was a research fellow in the Department of Microbiology and molecular genetics at Harvard Medical School. He has been a member of the faculty since 1979.

Cohen, an assistant professor of bacteriology, earned his undergraduate degree from the University of Illinois. He received his medical degree from Rush Medical College and was a postdoctoral fellow at Yale Medical School prior to joining the faculty of the University of North Carolina in 1980.

Dr. Stuart Bondurant, dean of the School of Medicine, announced the awards, which provide funding to be used at the discretion of the recipient for the support of scholarly endeavors. The active term of the fellowship is four years.

The academic medicine fellowship program is supported by a fund established by the Jefferson-Pilot Corporation. The intent of the program is to attract and hold promising young faculty members. The candidates are nominated by senior faculty members. "This year deliberations were especially difficult," said Bondurant, "as there were numerous outstanding nominees."

Dr. Charles B. Watson, assistant professor of anesthesiology, recently was elected president of the Carolina-Virginia Society of Critical Care Medicine. The society is a multidisciplinary organization of physicians, nurses, therapists and technicians who are interested in critical care.

Jan Riordan, supervisor of surgical intensive care units, was elected a council member and Dr. E. F. Klein, professor of anesthesiology, was named chairman of the committee on financial reimbursement.

The Carolina-Virginia Society of Critical Care Medicine held its first educational symposium in May. It was co-sponsored by the Department of Anesthesiology and covered a wide range of critical care-related topics of interest to health professionals.

Meeting participants included: Alicia Arvidson, assistant director of surgical services; Dr. Elizabeth Mann, assistant professor of anesthesiology; Dr. Mitchell Friedman, assistant professor of medicine; Dr. Edwin A. Bowe, assistant professor of anesthesiology and Pat Mendenhall, administrative assistant in the Department of Anesthesiology.

Dr. Joan C. Rogers, associate professor of occupational therapy at the University of North Carolina at Chapel Hill, has been awarded the Eleanor Clarke Slagle Lectureship, the highest academic honor given by the American Occupational Therapy Association.

The award, presented at the association's recent annual conference in Philadelphia, Pa., was presented to Dr. Rogers for her development of occupational therapy theory and research supporting the importance of occupation as a health determinant and for successfully blending the roles of educator, researcher and practitioner.

The Bowman Gray School of Medicine Wake Forest University

Dr. Lawrence R. DeChatelet, professor of biochemistry at Bowman Gray, died June 29 at age 41.

He joined the Bowman Gray faculty in 1969 and was prominent both as a scientist and as a teacher. Dr. DeChatelet was internationally known for his research on the pathobiology of white blood cells and was the author of more than 120 scientific papers which have been published in professional journals. He also reported on his research at the Second European Conference on Biochemistry of Phagocytes in 1980 in Trieste, Italy.

Dr. DeChatelet was the 1975 recipient of the Award for Teaching Excellence, the highest teaching award given to a member of the Bowman Gray faculty. He also was a two-time winner of the school's Basic Science Teaching Award. He received a further honor in 1979 when the medical school's graduating class dedicated its yearbook to him.

(continued on page 744)

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42 patients in private practice, approximately three times as many patients reported feeling refreshed and alert upon awakening after a night on Dalmane (flurazepam/Roche) compared to placebo nights.² This difference was highly significant ($p < 0.001$). And a retrospective study of 2,000 hospitalized patients who received Dalmane revealed only a 3.1% incidence of side effects.³

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on and/or ataxia increases with larger doses in the elderly, it is recommended that the dosage be limited to 15 mg.

Moreover, the efficacy and safety of Dalmane for the treatment of insomnia have been demonstrated in thousands of patients with a variety of primary medical conditions, including cardiovascular, neuropsychiatric, endocrine-metabolic, gastrointestinal, genitourinary, respiratory and musculoskeletal disorders.¹ Dalmane (flurazepam HCl/Roche) is contraindicated in pregnancy and in patients hypersensitive to the drug.

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Rebound insomnia—a worsening of sleep beyond pretherapy levels after drug discontinuation—has been reported as a potential clinical problem with some hypnotics.^{9,10} However, this problem has not been reported with Dalmane. In eight out of eight sleep laboratory studies, there were no reports of rebound insomnia.¹¹ When you prescribe Dalmane, you can be confident of efficacy that enhances therapeutic progress. Your insomniac patients can be assured of a restful night, night after night—a good start for a good morning.

References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Zimmerman AM: *Curr Ther Res* 13:18-22, Jan 1971. 3. Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther* 21:355-361, Mar 1977. 4. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 5. Meyer JA, Kurland KZ: *Milit Med* 138:471-474, Aug 1973. 6. Feller HL, Gibbons B: *Med Times* 101(8):130-135, Aug 1973. 7. Jacobson A et al: *Psychophysiology* 7:345, Sep 1970. 8. Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc* 27:541-546, Dec 1979. 9. Kales A, Scharf MB, Kales JD: *Science* 201:1039-1041, Sep 1978. 10. Kales A et al: *JAMA* 241:1692-1695, Apr 1979. 11. Monti JM: *Methods Find Exp Clin Pharmacol* 3(5):303-326, 1981.

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Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

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Dr. Samuel H. Love, associate professor of microbiology at Bowman Gray, died July 14 at age 54.

Dr. Love, who held the Ph.D. degree from the University of Pennsylvania and who did post-doctoral work at the Massachusetts Institute of Technology, taught and conducted research at Bowman Gray since 1955.

In 1980, he was named by Averett College as its outstanding alumnus of the year. He was cited then for his successful biomedical research.

The Bowman Gray School of Medicine has been awarded a \$2.4 million, four-year grant from the National Cancer Institute for continued and expanded support of the Piedmont Oncology Association (POA).

The association consists of about 80 cancer specialists, including medical oncologists, surgeons, radiologists and pathologists, in a five-state region. The POA was formed to speed the transfer of new cancer-care technology and to evaluate that technology.

According to federal officials, the POA formed in 1976 by Bowman Gray represents a prototype for the nation. The Bowman Gray POA is heavily oriented toward affiliations with community-based physicians rather than physicians who are solely associated with a hospital.

A major aim of the new grant will be to expand the number and scope of phase two and three cancer

studies, especially those involving several approaches to cancer care.

Physicians involved in the POA meet quarterly at Bowman Gray for an exchange of information gained from patient treatment throughout much of the five-state region and for gaining further information about advances in cancer care.

Dr. David M. Biddulph, associate professor of anatomy, has been appointed to a three-year term on the editorial board of the *American Journal of Physiology: Endocrinology and Metabolism*.

Dr. Robert A. Diseker, associate professor of community medicine, has been appointed a reviewer for the *Journal of the American Medical Association*.

Dr. Ralph B. Leonard, assistant professor of surgery (emergency medicine), has been appointed an oral examiner of the American Board of Emergency Medicine for 1982-85.

Sandra M. Maree, instructor in anesthesia (nurse anesthesia), has been appointed to the Liaison Committee of the American Association of Nurse Anesthetists and the American Society of Anesthesiologists for 1982-83.

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Dr. Charles H. McLeskey, assistant professor of anesthesia, has been elected an examiner for the American Board of Anesthesiology.

Dr. I. Meschan, professor of radiology, has been awarded honorary membership in the North Carolina Society of Radiologic Technologists.

Dr. John R. Ureda, assistant professor of community medicine, has been elected chairperson of the North Carolina Board of Registry for Health Educators of the North Carolina Society of Public Health Educators.

Dr. Paul P. Gwyn, clinical instructor in surgery (plastic surgery), has been elected president of the North Carolina Society of Plastic, Maxillofacial and Reconstructive Surgeons.

Duke University Medical Center

Three young medical researchers at Duke University Medical Center have been chosen as the first recipients of the Nanaline Duke Scholarships. Each will receive \$10,000 annually for three years to support their research.

The scholars are Dr. Thorir D. Bjornsson, assistant professor of pharmacology and medicine; Dr. Jack D. Keene, assistant professor of microbiology and immunology; and Dr. Richard B. Marchase, assistant professor of anatomy.

Nanaline H. Duke was the widow of the founder of Duke University and the medical center, James B. Duke.

Bjornsson's primary research interest is the clinical pharmacology of antithrombotic agents and what makes blood clot. A native of Iceland, Bjornsson received his medical degree from the University of Iceland in 1971 and completed his internship and residency in Iceland. He came to Duke in 1978 from Stanford University Medical Center where he completed a postdoctoral fellowship in medicine.

Keene's research work deals with the natural life cycle of the virus. He is a graduate from the University of California at Riverside and received his doctorate from the University of Washington at Seattle. He came to Duke in 1979 after serving as staff fellow of the molecular virology section in the laboratory of molecular biology at the National Institute of Neurological, Communicative Disorders and Stroke.

Marchase will use the scholarship to study fertilization, specifically sperm-egg cell interaction. He is a graduate of Cornell University and received his doctorate from the Johns Hopkins University in 1976. He came to Duke for a post-doctoral fellowship and was named assistant professor of anatomy in 1978. He is a member of the Duke University Comprehensive Can-

cer Center and the Duke-VA Center for Cerebrovascular Research.

A unique, portable monitor in the newly opened Center for the Advanced Study of Epilepsy at Duke University Medical Center will enable physicians to record epileptic seizures in progress.

This is extremely important in diagnosing and treating a patient's particular kind of epilepsy, said Dr. James McNamara, director of Duke's epilepsy center and co-developer of the monitoring unit.

The unit provides a continuous video and audio account of the patient as well as an electrocardiogram (EKG) and electroencephalogram (EEG) and can be moved anywhere in the medical center.

Dr. Wilkie A. Wilson Jr., associate medical research professor in the Department of Pharmacology and Dr. J. Scott Luther, clinical director of the epilepsy center, helped McNamara assemble the portable unit from readily available monitoring equipment.

McNamara said the new center, one of fewer than 30 in the country, also has a surgery program for epilepsy patients, conducts research with support from a NIH program project grant and tests new drug approaches for treating epilepsy.

A pilot program to reduce aggressive and disruptive behavior of school children was so successful that it will be expanded next year, says its initiator, medical center psychologist Dr. John E. Lochman.

The psychologist teamed up with Dr. Peter Burch, a guidance counselor at a Durham elementary school, to form "anger-coping groups" of five boys each, which were led by the school's guidance counselor and personnel from Duke's division of child and adolescent psychiatry.

"After 12 group sessions, 60% of the students showed moderate improvement in reducing aggressive behaviors," said Lochman. Improvement was measured by questionnaires filled out by the boys, their parents and teachers before and after participating in the program.

Lochman said the groups included fourth, fifth and sixth graders from eight different county schools. "We put a lot of effort into teaching the children to think about different solutions, whether aggressive or not, and then to consider the consequences."

This emphasis on problem-solving skills is what makes the Duke pilot program unique among behavioral training programs for aggressive children, Lochman said. Such programs involving anger-coping groups are not widely used in this country, he said.

"I'm convinced that if we intervene early enough we can make changes that can help prevent some of these children from ending up in trouble later," Lochman said.

Blood tests can rule out 95% of the men who are falsely accused of being a child's father, said Dr. Emily Reisner, director of the Duke University Medical Center laboratory that analyzes blood samples for paternity cases. A medical break-through in blood testing has been in use for several years, she said, but most people still don't think blood testing is an accurate way to determine paternity.

Reisner, a specialist in immunogenetics, said the new type of testing is called HLA — a term for the more than 50 different known factors in the blood. Those factors are a type of genetic fingerprint that is passed on to offspring. When used with the standard blood grouping and other tests, HLA gives a 95% exclusion rate, she said.

Dr. Bernard Amos, a Duke professor of immunology, had an important role in the basic research that led to the current understanding of the HLA system.

Assistant Attorney General Clifton H. Duke said the HLA testing has had a tremendous impact on paternity cases in this state. He said the availability of the tests has also increased the number of child support cases settled out of court.

Dr. Robert J. Lefkowitz, James B. Duke Professor of Medicine, received the Ernst Oppenheimer Memo-

rial Award from the Endocrine Society at its annual meeting in San Francisco on June 17.

The award recognizes outstanding research accomplishments in endocrinology by a young investigator. Lefkowitz was recognized for his research on cell surface receptors.

Lefkowitz received his bachelor and medical degrees from Columbia University and completed his medical and postgraduate clinical training there.

He holds B.A. and M.D. degrees from Columbia University and came to Duke in 1973.

Dr. Kathryn Munning, assistant professor of community and family medicine, was elected to the executive committee of the Society of Teachers of Family Medicine.

Dr. David F. Merten, associate professor of radiology and pediatrics, was selected for fellowship in the American College of Radiology. He received the award during the annual meeting of the ACR Sept. 20-23.

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A graduate of the University of Cincinnati College of Medicine, Merten came to Duke in 1977.

Dr. Frank R. Lecocq, 53, an associate professor of medicine and personal physician to many medical center faculty members, died June 12 of an apparent heart attack.

Lecocq, a member of the American College of Physicians, joined the Duke faculty in 1975 after a 20-year Air Force career which included four years of work with the U.S. astronauts. He was chairman of the Department of Medicine at the U.S. Air Force Medical Center at Wright-Patterson Air Force Base from 1972-75.

After receiving his undergraduate and medical degrees from the University of Illinois, Lecocq served a residency in internal medicine at Willford Hall, U.S. Air Force Medical Center. He completed a fellowship in endocrinology at the University of Texas Medical School in Dallas.

Richard J. Peterson, Department of Surgery, received a national research service award of \$18,468 from the National Heart, Lung and Blood Institute. His area of training is congenital and rheumatic heart diseases.

Michelle W. Kloss, Department of Pharmacology, received a pre-doctoral fellowship from the Pharmaceutical Manufacturers Association Foundation, Inc. to fund her research on the role of drug metabolism and protective mechanisms of cocaine-induced liver injury.

Dolph O. Adams, professor of pathology, received a \$93,459 research grant from the National Institute of Environmental Health Sciences for his study, "Immunotoxicology: Environmental Agents and Macrophages." He also received a \$15,640 conference grant from NIAID and CA for a workshop on macrophage activation.

Walter B. Vernon, Department of Surgery, received a national research service award of \$17,736 from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study immunology.

Laura F. Schweitzer, Department of Anatomy, received a \$17,736 national research service award from the National Institute of Neurological and Communicative Disorders and Stroke to study neuroanatomy.

George K. Michalopoulos, assistant professor of pathology and radiology, received a \$98,076 research grant from the National Cancer Institute to study cell culture and transplantation of human hepatocytes.

J. Victor Nadler, assistant professor of pharmacology, received a \$38,498 research career development award from the National Institute of Neurological and Communicative Disorders and Stroke. Nadler is studying "Plasticity of Transmitter of Biochemistry in CNS."

David C. Sabiston Jr., James B. Duke Professor of

surgery and chairman of the department, received a \$146,817 research grant from the National Heart, Lung and Blood Institute to study "Coronary Insufficiency and Myocardial Revascularization."

Ralph J. Damiano, Department of Surgery, received a \$17,736 national research service award from the National Heart, Lung and Blood Institute to study arrhythmias.

Donald D. Glover Jr., Department of Surgery, received a \$17,736 national research service award from the National Heart, Lung and Blood Institute to study coronary heart disease.

Elliot Mills, professor in the Department of Pharmacology, received a \$64,900 grant from the American Heart Association to study the "Restoration of Chemoreflexes after Carotid Body Resection."

Mary Ella Chamberlin, Department of Physiology, received a \$5,900 grant from the American Heart Association for her project, "Chloride Transport and Metabolism in the Thick Ascending Limb of Henle's Loop."

Richard S. Surwit, associate professor of psychiatry and assistant professor of experimental medicine, received a \$38,750 research scientist development award from the National Institute of Mental Health. He is studying "Behavioral Control of Peripheral Vascular Disease."

Michael B. Higginbotham, research associate in the division of cardiology, received a \$6,000 grant from the American Heart Association to study "Noninvasive Assessment of Cardiac Output and Arteriovenous Oxygen Difference at Rest and During Exercise in Normal Subjects and Patients with Cardiac Disease."

Robert H. Harris Jr., associate professor of medicine, received a \$57,200 grant from the American Heart Association to study "Mechanisms Underlying Compensatory Renal Growth."

K. V. Rajagopalan, professor of biochemistry, received a \$162,854 research grant from the National Institute of General Medical Sciences to study the structure and function of enzymes and the role of metals.

Richard A. Jackson, Department of Medicine, received a \$20,040 national research service award from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study endocrinology.

Seth J. Worley, Department of Medicine, received a \$6,000 grant from the American Heart Association to study "Development of an Electrode System to Record Multiple Discrete Electrograms during Ventricular Fibrillation from Precise Stable Readily Determined Locations in the Canine Heart."

Kenneth A. Taylor, assistant medical research professor in the Department of Anatomy, received a \$15,912 research grant from the Muscular Dystrophy Association to support his project, "Structure of Insect Flight Muscle Analyzed by 3-Dimensional Reconstruction of Electron Micrographs."

Paul E. Klotman, Department of Medicine, received a \$6,000 grant from the American Heart As-

sociation to study "The Role of Receptor Mediated Transcellular Calcium Flux and Intracellular Calmodulin in the Vasoconstruction of Postobstructive Nephropathy."

Robert L. Wesly, Department of Surgery, received a \$21,780 national research service award from the National Heart, Lung and Blood Institute to study coronary heart disease.

Khin Mae Hla, assistant professor in the Department of Medicine, received a \$5,000 grant from the American Heart Association to study "Pseudohypertension in the Elderly."

Albert O. Davies, assistant professor of medicine, received a \$55,880 research grant from the American Heart Association to study "Adrenergic Receptor Regulation by Steroid Hormones."

Lawrence D. German, an associate in the division of cardiology, received a \$5,976 grant from the American Heart Association to study "Closed Chest Catheter Ablation of the His Bundle — Energy Requirement and Quantification of Myocardial Damage."

Jeffrey L. Garvin, Department of Physiology, received a \$5,900 grant from the American Heart Association to study "Amiloride Sensitive Na^+ Entry

in Isolated Toad Bladder Epithelial Cells."

Kerry L. Lee, associate professor in the division of biometry, Department of Community and Family Medicine, received a \$38,750 research career development award from the National Library of Medicine for data analysis of cardiovascular information systems.

American College of Surgeons

Dr. F. Maxton Mauney, Jr., of Asheville has been elected vice chairman of the American College of Surgeons' Joint Review Committee on Educational Programs for Physicians' Assistants.

Seaboard Medical Association

Dr. John H. Furr of Norfolk, Va., was installed as president of the Seaboard Medical Association at the group's annual session at Kill Devil Hills in June. He succeeds Dr. Ira M. Hardy II of Greenville, N.C.

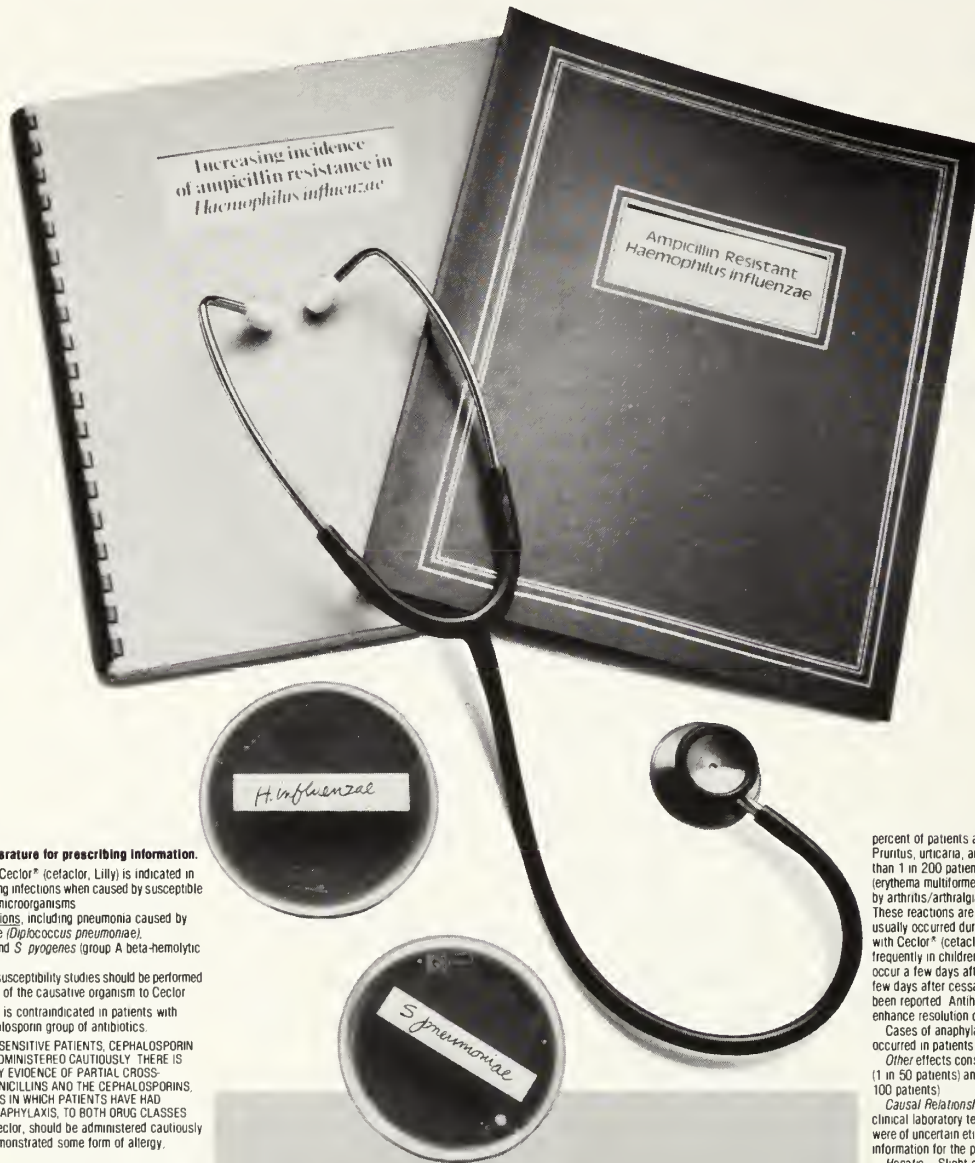
Other new officers of the two-state society are Dr. W. Beverly Tucker of Henderson, first vice president; Dr. Willette L. LeHew of Norfolk, second vice president; and Dr. Julian R. Taylor of Ahoskie, third vice president.

GEOFFREY CHAUCER [1340?-1400]

With us ther was a Doctour of Phisik;
In al this world he was ther noon hym lik,
To speke of phisik and of surgerye,
For he was grounded in astronomye.
He kepte his patient a ful greet deel
In houres by his magyk natureel.
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Were it of hoot, or coold, or moyste, or drye,
And where they engendred, and what humour.
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The Canterbury Tales, Prologue

An added complication... in the treatment of bacterial bronchitis*



Brief Summary.

Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Usage in Pregnancy: Although no teratogenic or antiterfity effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in fetuses given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy: Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefaclor therapy are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been observed in conjunction with therapy with Ceclor.

Hypersensitivity reactions have been reported in about 1.5

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.⁷

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percent of patients and include morbilliform eruptions (1 in 100), Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor® (cefaclor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). (100281R)

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.⁸

Note: Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

References

1. Antimicrob. Agents Chemother., 8:91, 1975.
2. Antimicrob. Agents Chemother., 11:470, 1977.
3. Antimicrob. Agents Chemother., 13:584, 1978.
4. Antimicrob. Agents Chemother., 12:490, 1977.
5. Current Chemotherapy (edited by W. Siegenbaler and R. Luthy), 11:880. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother., 13:861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G.L. Mandell, R.G. Douglas, Jr. and J.E. Bennett), p. 487. New York: John Wiley & Sons, 1979.

Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285. **Eli Lilly Industries, Inc.** Carolina, Puerto Rico 00630.



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PHYSICIAN ASSISTANTS — Would a Physician Assistant be of benefit to your practice? The North Carolina Academy of Physician Assistants responds promptly to physician inquiries. Contact: Paul C. Hendrix, P.A.-C, Chairman, Employment Committee, 708 Duluth Street, Durham, North Carolina 27705. Telephone: 919-684-6101.

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Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal, adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect.

Adults: Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

How Supplied: For oral administration, Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100* and 500,* Prescription Paks of 50, available in trays of 10* Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25,† and in boxes containing 10 strips of 10.‡

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North Carolina

MEDICAL JOURNAL

November 1982, Vol. 43, No. 11

Published Monthly as the Official Organ of The North Carolina Medical Society

(ISSN-0029-2559)

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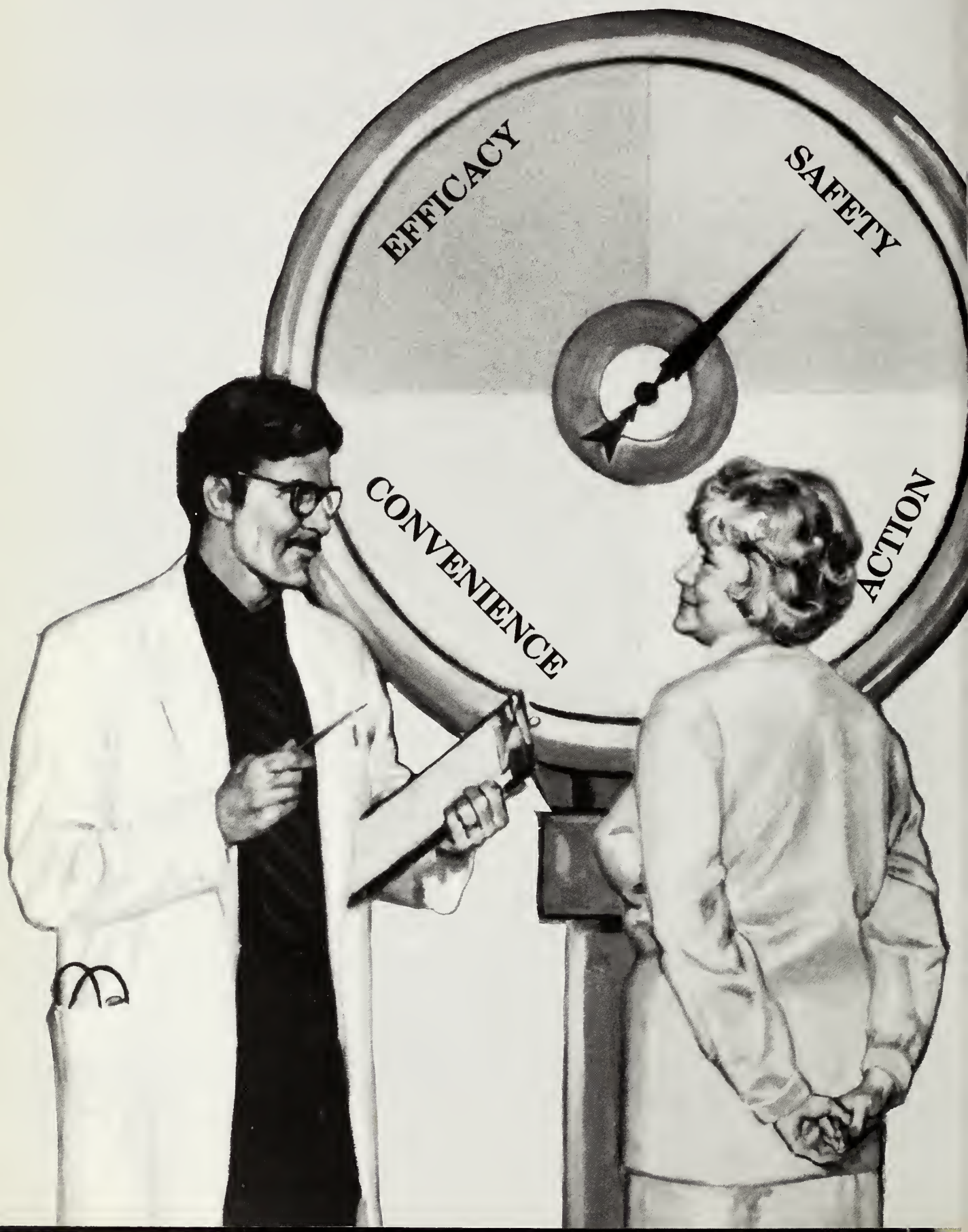
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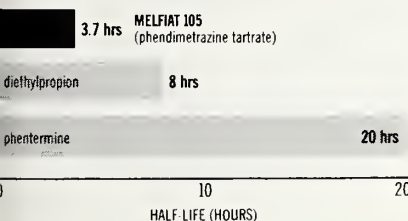
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Therapeutic efficacy combined with a short half-life and minimal abuse potential make MELFIAT 105 the drug of choice in the treatment of exogenous obesity. Because MELFIAT 105 has a short half-life, it minimizes drug accumulation and helps to eliminate such effects as disturbed sleep patterns. And, because MELFIAT 105 has significantly lower abuse potential than the amphetamines¹, there's less risk to your patients. According to a NIDA (National Institute on Drug Abuse) report, phendimetrazine appears to be the least abused anorexiant when compared to phentermine and diethylpropion².

Half-life comparison of MELFIAT 105 and other anorexiants²



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Sustained-Release Capsules 105 mg

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References: 1. Sheu YS, Ferguson JA, Cooper JR: *Evaluation of the Abuse Liability of Diethylpropion, Phendimetrazine, and Phentermine*, unclassified document ADAMHA, HHS, Office of Medical and Professional Affairs, NIDA, 1980. 2. Douglas JG, Munro JF: The role of drugs in the treatment of obesity, *Drugs* 21:362-373, 1981.

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CONTRAINDICATIONS: Advanced arteriosclerosis, symptomatic cardiovascular disease, moderate to severe hypertension, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors (hypertensive crises may result).

WARNINGS: Tolerance to the anorectic effect usually develops within a few weeks. When this occurs, the recommended dose should be discontinued. Phendimetrazine tartrate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly.

Drug Dependence: Phendimetrazine tartrate is related chemically and pharmacologically to the amphetamines. Amphetamines and related stimulant drugs have been extensively abused, and the possibility of abuse of phendimetrazine tartrate should be kept in mind when evaluating the desirability of including a drug as part of a weight-reduction program. Abuse of amphetamines and related drugs may be associated with intense psychological dependence and severe social dysfunction. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high-dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG, manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxication is psychosis, often clinically indistinguishable from schizophrenia.

USAGE IN PREGNANCY: The safety of phendimetrazine tartrate in pregnancy and lactation has not been established. Therefore, phendimetrazine tartrate should not be taken by women who are or may become pregnant.

USAGE IN CHILDREN: Phendimetrazine tartrate is not recommended for use in children under 12 years of age.

PRECAUTION: Caution is to be exercised in prescribing phendimetrazine tartrate for patients with even mild hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of phendimetrazine tartrate and the concomitant dietary regimen. Phendimetrazine tartrate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose.

ADVERSE REACTIONS: Cardiovascular: Palpitation, tachycardia, elevation of blood pressure.

Central Nervous System: Overstimulation, restlessness, dizziness, insomnia, euphoria, dysphoria, tremor, headache; rarely psychotic episodes at recommended doses.

Gastrointestinal: Dryness of the mouth, unpleasant taste, diarrhea, constipation, other gastrointestinal disturbances.

Allergic: Urticaria.

Endocrine: Impotence, changes in libido.

OVERDOSEAGE: Manifestations of acute overdose with phendimetrazine tartrate include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Fatal poisoning usually terminates in convulsions and coma. Management of acute phendimetrazine tartrate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Acidification of the urine increases phendimetrazine tartrate excretion. Intravenous phentolamine (Regitine) has been suggested for possible acute, severe hypertension, if this complicates phendimetrazine tartrate overdose.

DOSAGE AND ADMINISTRATION: Since Melfiat® 105 (phendimetrazine tartrate) 105 mg is a sustained-release dosage form, limit to one sustained-release capsule in the morning. Melfiat® 105 (phendimetrazine tartrate) is not recommended for use in children under 12 years of age.

HOW SUPPLIED: Each orange and clear sustained-release capsule contains 105 mg phendimetrazine tartrate in bottles of 100.

CAUTION: Federal law prohibits dispensing without prescription.



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The Everchanging Field of Medicine...

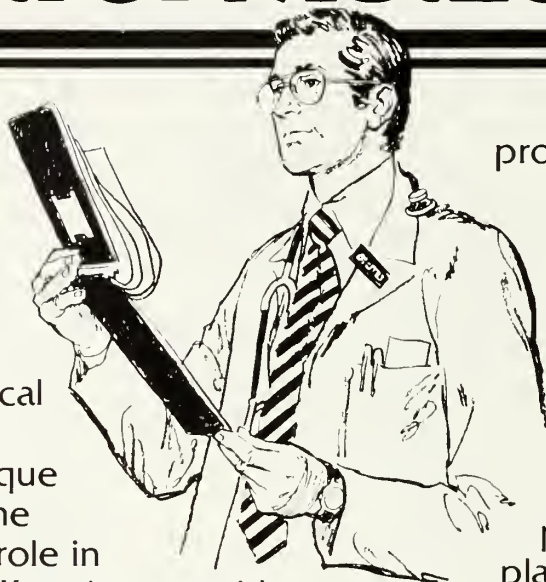
A doctor's study of medicine doesn't end with medical school.

Every medical advance or new technique redefines the physician's role in some way. Keeping up with these constant developments is part of being a doctor.

Times do change...and this is especially true in the field of medicine.

Yet, there are some things in life that don't change. Accidents and serious illnesses still happen unexpectedly. And financial hardship often follows — especially if you're kept away from work for a while.

For that reason, Disability Income Protection for younger doctors was developed. As a member of the North Carolina Medical Society, you are eligible for



this important protection which can help replace lost income if a covered accident or illness keeps you from your practice.

The regular monthly benefits payable under this plan may be used to cover any expenses you decide on — medical bills, groceries or even car payments.

If you are under the age of 55 and active full time in your practice, find out more about this valuable protection by contacting your local Mutual of Omaha representative.

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North Carolina Medical Society

PRESIDENT'S NEWSLETTER

NO. 6

NOVEMBER 1982

This month the Ophthalmologists had their annual meeting in Asheville and as usual their program was filled with informative speakers and new plans for the upcoming legislative year.

The Orthopaedists had their annual meeting in Asheville a week later and had an outstanding program. Your President was very graciously received, and it continues to be a real eye opener to visit with the various specialty groups and learn of the needs shared by specialty groups and medicine in general.

We need to work together for medicine as a whole, and we also need to help each other with the problems that are unique to our specialties. All of these conferences have pondered the inroads being made into medicine by paramedical groups. Physicians are becoming more aware of the serious effect that these inroads could have if they are allowed to continue.

MEDPAC, our political action committee, has been very much in the news this election year. MEDPAC-State is the largest and most influential of the pacs that operate in North Carolina. MEDPAC-Federal, though much smaller, is affiliated with AMPAC, the political action committee of the AMA; thus our political arm has respect at the federal level as well. Both committees are non-partisan and contribute to both Republicans and Democrats.

MEDPAC has a separate Board of Directors appointed by the Executive Council and a separate Executive Director. In news releases we always try to make sure that MEDPAC is identified as a separate entity from the Medical Society, but the news media does not always state that fact as clearly as we would like.

I received several letters and telephone calls after the press announced that MEDPAC-Federal had endorsed Ike Andrews after he was convicted for driving under the influence. I spoke with Angus McBryde, M.D., of Charlotte, Chairman of the MEDPAC Board, who informed me that the Board met on September 12 several weeks before the unfortunate incident. A contribution had already been made based on the Congressman's voting record, and public knowledge of the contribution was available. Dr. McBryde said that since the endorsement was public knowledge and the contribution had been made there was no way that the Board could reconsider this action.

The MEDPAC Board votes its candidate endorsements based on medical issues and political considerations, not broad philosophy. Candidates who receive MEDPAC's endorsement are grateful and have grown accustomed to this help. While I do not always agree with every decision the MEDPAC Board makes, I am completely convinced that it is an integral part of our success in the Legislature and Congress.

I hope that each of you will join me in supporting MEDPAC and become involved in the legislative program of the Medical Society this year.

The Society's Committee on State Employees' Health Benefits Plan has recently completed its tasks, and I would like to take this opportunity to express the sincere gratitude and deep thanks of the Society for their efforts. Responding on

short notice to legislative requirements enacted this summer, the Committee was organized and met on numerous occasions with the administrator of the health plan concerning the insurance program. The work of the Committee has been ably completed and the committee has been dissolved. All the members of the committee deserve our thanks.

My continuing review of the works and words of the Society's Past-Presidents brings me to John S. Rhodes, M.D., who served as President in 1963-64. During Dr. Rhodes' term, the Society sponsored a county by county campaign of polio immunization using the Sabin Oral Vaccine. The emergence of Medicare was another important consideration that year. Dr. Rhodes' reflections on that issue go right to the heart of the matter.

"The private citizen is still paying for the bulk of health care. Let us not forget that, indirectly, he bears the total cost.... Individual responsibility for the costs of medical care, exercised through budgeting and private insurance, is the method of choice for our people, not only because it meets the need, but because it is in harmony with our ideals, our institutions, and our way of life."

Dr. Rhodes also spoke of a need "to arouse doctors to more enlightened and aggressive exercise of their citizenship." He alluded to the recent formation of MEDPAC and said it would "afford doctors, their wives and their friends an opportunity to engage in a long-range program for the support of candidates for office who are sympathetic to the views of medicine."

It's important to note that Dr. Rhodes placed great emphasis on close cooperation with the county medical societies. I strongly endorse that working philosophy, and all of us should honor it both in spirit and practice.

You should be aware of one important action item from the October 3, 1982, meeting of the Executive Council. This action pertains to Resolution 17 adopted at the May 1982 House of Delegates which called for the Nominating Committee of the Society to circulate the nominations including those for President, President-Elect, First and Second Vice-Presidents, and any other nomination that is currently revealed only at the full meeting of the House of Delegates, to the membership at least 60 days prior to the Annual May Meeting of the House of Delegates. The Executive Council adopted a motion "that the implementation of this action by the House of Delegates because of the wording of our Constitution and Bylaws be postponed until 1984 and that the membership of the Society be promptly informed of our actions." The Committee on Constitution and Bylaws had been requested to give an opinion whether this change relative to announcement of nominees could be implemented for nominees to be announced prior to the 1983 Annual Meeting, or must be delayed for one year until the wording of the Bylaws change has been adopted by the House of Delegates. It was the opinion of the Committee that the House of Delegates must vote on the wording change in the Bylaws, and if the House of Delegates abides strictly by the approved Bylaws, the implementation would have to be delayed until the wording has been approved.

Sincerely,



Marshall S. Redding, M.D.
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A Brief History of Hookworm Disease in North Carolina

Robert V. House, MSPH

ABSTRACT The New World hookworm, *Necator americanus*, was once a major health problem in North Carolina, infecting almost 37% of the state's population. The parasite was probably introduced into the state by African slave trade prior to 1808. The state's geography and climate, especially that of the Coastal Plain, and inadequate sanitary waste disposal by the poor provided an ideal environment for establishment of the worm. In 1910 the Rockefeller Sanitary Commission was established to eradicate hookworm from the South. By the end of the commission's work in 1914 the prevalence of hookworm in North Carolina had dropped to about 26%. The last major survey in 1954 found a rate of about 13%. Continued treatment and improvement in sanitation have further reduced both the incidence and prevalence of hookworm disease in North Carolina to very low levels.

Necator americanus, the "American killer," is the scientific name of the once-dreaded New World hookworm. Although it is now fairly well under control in the United States, it pays to remember the "germ of laziness" once responsible for great suffering and debilitation in the South. This article describes the history of this parasite in North Carolina.

In order to appreciate the impact of hookworm disease, it is important to be familiar with the worm's life cycle and its effect on the host (Figure 1). The life cycle begins with the passage of worm eggs in the feces of the host. If the feces are deposited on soil which is moist and sandy, the eggs hatch into larvae. These larvae are able to penetrate the skin of humans rapidly, making contact with polluted soil (as through bare feet) hazardous. The worm works its way into the circulatory system, travels through the lungs, and eventually reaches the intestine where it begins feeding on blood. After reaching sexual maturity, eggs are produced, and the cycle is repeated.¹

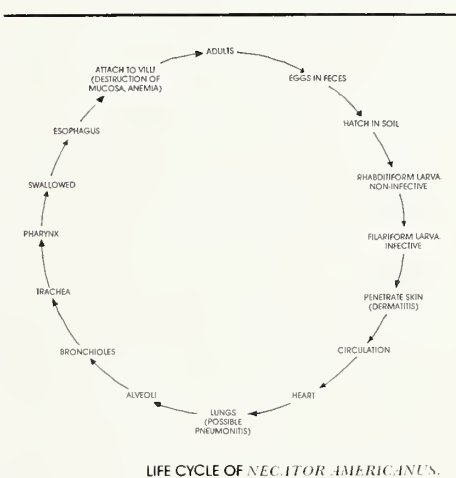


Fig. 1

Hookworm disease is characterized by chronic anemia, abdominal pain, lethargy, and pica (perverted appetite) often manifested as geophagia (dirt eating). It is appropriate to note here that a person with hookworm infection can have up to 50 hookworms without exhibiting symptoms. Since worms are eliminated only by medical treatment, chronic cases are the rule. The constant lethargy resulting from heavy infections was probably a contributing factor in what was considered the "laziness" of both whites and blacks in poorer sections of the South.

The earliest account of hookworm in North Carolina — and in the United States — was given by Joseph Pitt in 1808, who described geophagia by blacks and poor whites and attributed it to poor nutrition.¹ J. L. Chabert was not as kind. In 1821 he observed geophagia by slaves and gave an interesting explanation for the phenomenon:

*"For most of the Negroes doing nothing is the supreme bliss. Some of them carry love of idleness to . . . every means suggested by sloth. Among these, earth, the internal use of which causes a species of poisoning, is the most common of all. . . ."*¹

Chabert's description of this "poisoning" is a classical description of hookworm disease. In 1849 James Duncan attributed anemia among slaves to geophagia. His writings differ from earlier works in that some cases were seen as symptoms rather than causes of disease.

The latter decades of the 19th Century brought an increased awareness of helminth infections, notably with *Ancylostoma duodenale*, the Old World hookworm. In 1902 C. W. Stiles recognized some cases as being caused by a new species of

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Reprint requests to Mr. House at P.O. Box 262, Coats, N.C. 27521

hookworm. Quoting Article 21 of the International Rules of Zoological Nomenclature, he named the parasite *Uncinaria americanus*.² In 1903 the name was changed to *Necator americanus*.³

Because of an apparent increase in the number of hookworm cases detected, some scientists supposed that *Necator americanus* was endemic to the New World. However, in 1905 Looss recognized this parasite in chimpanzees and pygmies in Africa. Since human migration occurred from east to west, the presence of *Necator* in the New World was postulated by Looss to be the direct result of slave trade. It has been suggested that this parasite, along with typhus and other communicable diseases, was a major cause of death for many slaves before reaching the New World.²

Hookworm requires certain environmental conditions for optimal growth including sandy soil, warmth, and humidity. The climate of North Carolina, especially that of the Coastal Plain, provided all these conditions. It seems fairly certain that after arriving with the slaves, *Necator* quickly became established in its new home.

Public awareness of the hookworm problem first came in 1902 when Stiles addressed the Sanitary Conference of American Republics. He told his audience that the "presence of this disease in the South . . . has resulted in the pitiable condition of poor whites in many Southern states, has resulted in their inferior physical development and mental powers, and is the cause of the proverbial laziness of the 'crackers'." Although insulting many Southerners, the speech was instrumental in bringing the problem to public attention.⁴

Stiles pursued the cause of eradication by means of lectures to physicians. News of this work reached John D. Rockefeller who subsequently contributed \$1 million to combat hookworm. Thus was born the Rockefeller Sanitary Commission for the Eradication of Hookworm.⁵

The commission was established in 1909 with three major objectives:

1. To determine the geographical distribution of the disease;

2. To cure all current cases of hookworm;

3. To prevent reinfection by controlling soil pollution.⁶

The chief administrators of the commission felt it would be necessary to have an educator on the board due to the major role of public education in the campaign. Stiles suggested J. Y. Joyner, state superintendent of public instruction in North Carolina. Joyner was chosen as administrative secretary but declined in favor of his work in North Carolina's school system. Wyclift Rose was then chosen for and accepted the position.² The individual Southern states then set up separate campaigns under the Rockefeller Commission. The North Carolina Campaign Against Hookworm Disease first accepted duties in 1910. Joseph Ferrell, a physician, was at first director of sanitation in North Carolina and then director of the North Carolina campaign.⁴ In 1911 he listed chronologically the activities of the campaign up to that point.⁷ From March to June of 1910, data on distribution of the disease were collected from diverse groups including the military and college students. In addition, administrative duties including personnel recruitment and information preparation were begun. From July to August of 1910, efforts were made to enlist the aid of physicians in the campaign and to educate schoolteachers. More extensive data on incidence and prevalence were obtained, and the distribution of literature was begun. Intensive education of the public began in September of 1910. After the data were gathered in the preliminary survey, sanitation and infection rates were compiled. Using these statistics, the state was divided into 20 regions of five counties each. Beginning in July of 1911, state and county dispensary operations were established. Five widely-separated stations were set up in each county, usually in a public building such as a schoolhouse. On advertised days a physician and microscopist would attend the dispensary for six hours. (See Figure 2.) In addition to free examination and treatment for hookworms, literature and lectures were offered. This

NOTICE!

The State Board of Health, acting with Columbus County, will open a field hospital for the treatment of HOOKWORM and other such diseases, at the following places in the county, on the dates named below.

Chadbourn, July 10th to 16th.
Whiteville, July 17th to 23rd.
Fair Bluff, July 24th to 30th.
Tabor, August 1st to 7th.
Lake Waccamaw, August 6th to 14th.
Freeman, August 14th to 21st.

There will be two wards in this hospital, one for males and one for females. A physician from the State Board of Health will be in charge of the hospital and an expert from the State Laboratory of Hygiene will be present to do the microscope work.

A lady chaperone will be in charge of the female ward and every courtesy and attention will be given all persons, rich or poor.

There will be illustrated lectures and demonstrations on sanitation daily. These will be in plain simple terms that any one can understand and any one can also see the workings of that wonderful instrument, the microscope, by simply asking the man in charge. We want every man, woman and child to be examined while the hospital is in his or her section. Many of the bad feelings people have, are due to hookworm, and we have found that about half of the people are infected.

This is Absolutely FREE--The State and County Are Paying For It.

So many people have been found infected and the results are so certain and so wonderful that the County and the State feel that it is worth dollars and cents to them to restore so many of their people to health and strength.

Come out on the dates named and see what is being done. Don't think it is the other fellow who needs this. It may be you. Bring a small bit of your bowel movement with you to be examined with the microscope. It may be worth many dollars or may be life itself to you or your child. You will have only this one chance for free treatment. Respectfully,

DR. C. L. PRIDGEN, State Board of Health.

Public announcement of dispensary days in Columbus County, North Carolina in 1911.

Fig. 2

system encouraged support and co-operation by the public since those attending could see almost immediate results from the treatment and would urge friends and neighbors to attend the dispensaries.

Dispensary days, at least in Mills Spring, N.C., were not unlike tent revivals. The lectures and examinations were alternated with public singing and picnics. The showmanship at such demonstrations was no doubt exciting to the isolated rural folk and anticipation of such shows helped to spread the word among neighboring communities.⁴

The prevalence of hookworms detected in North Carolina between 1910 and 1914 was 36.6% of the population. During this period the county with the highest rate was Brunswick where 75.5% of those examined were infected, while the county with the lowest rate was Haywood at 6.4%.⁶ This wide variation is undoubtedly geographic — Brunswick County in the Coastal Plain has light, sandy soil (ideal for hookworm egg development) while Haywood County in the mountain region has hard, rocky soil. If the counties are classified according to the number infected, an interesting pattern emerges. East of Wake County a sharp boundary divides heavy from light infections. In other words, all counties east of Wake (the Coastal

Plain) had greater rates of infection, between 40% and 80%. Likewise, infection was less prevalent in the Piedmont and even less in the mountains.

Breaking the 1910-14 period into separate years makes the results of the campaign more apparent. The statewide infection rate of 37.2% in 1910 had decreased to 34.5% by 1913. A sharper drop was seen between 1913 and 1914 when the rate dropped to 25.8%. As incidence decreased, so did the cost of examination and treatment. From 1910-12, the average cost of examination per person was 76 cents, and the average cost of treatment was \$1.26. By 1913 these costs had dropped to 46 cents and \$1.23, respectively.⁸

In addition to treating existing cases, the commission attempted to eliminate the source of infection — namely, soil pollution by unsanitary disposal of human feces. Until the campaign, sanitary waste disposal in North Carolina was a rarity. Surveys showed the state to contain many sources of infection, and sanitary privies were practically nonexistent. Along with the previously mentioned lectures on the *cause* of the disease, other lectures stressed the importance of disease *prevention*.

Sanitary privies were encouraged, especially in the public schools. New Hanover County was the first to install sanitary toilets in all white and black schools.² Along with the need to educate the people, however, was a need for public cooperation in all phases of public health work.⁴ In retrospect, we can appreciate the usefulness of mass education and public cooperation in the elimination of health problems.

As with any undertaking, the eradication campaign had its problems. Allocations were not always generous or even forthcoming. Reasons for this were most often political. For example, Albemarle voted an appropriation for the campaign and then rescinded it. The reason given for the turnabout was "it would be the ruin of our party if the news got out that we are spending the people's money for such a thing as hookworm treatment."⁴ Newspapers were first reluctant and later amused to print

hookworm news or treatment schedules.² Upon learning that the disease could be contracted by going barefoot, some North Carolinians suggested that this was another ploy by Rockefeller to make money by selling shoes.⁵ In spite of these initial misgivings, the response by North Carolinians to the campaign was overwhelming with over 36,000 people responding, articles written in 220 state newspapers, over 20,000 letters mailed, almost 225,000 pamphlets and bulletins distributed, and some 180 public lectures given. To quote Ferrell, "In short, the people are having their eyes opened."⁷

In addition to serving as the director of the North Carolina campaign, Ferrell wrote a pamphlet on hookworm at the request of the American Medical Association and also outlined a plan (which was never implemented) for long-term continuation of hookworm surveillance. On March 31, 1915 the North Carolina Campaign Against Hookworm Disease ended. Ferrell and the other administrators continued to combat hookworm through other health agencies.⁴

Following the work of the Rockefeller commission, hookworm in North Carolina went relatively unnoticed for several years. Even up to the present only one statewide survey has been conducted since 1914. Rather, selected counties have been surveyed and the results are discussed below.

In 1923 a hookworm survey was conducted in several communities in North Carolina. The study centered on the community of Knotts Island in Currituck County (Coastal Plain). The hookworm prevalence rate here had been reduced from 75.7% during the Rockefeller campaign to 23.2% by 1923 — still a formidable rate. The researchers decided to make Knotts Island a model community for hookworm control. With intensive treatment the infection rate was reduced to 3%, showing that thorough treatment is instrumental in controlling the problem.⁹ Since hookworm does not multiply in the body and is spread only by contact with polluted soil, proper sanitation should have made the community disease-free. Fol-

lowing this line of reasoning, a new model privy — the LRS privy — was installed there. The LRS privy, named after its three inventors, consisted basically of several watertight barrels, connecting pipes, and a zinc-lined box. It was completely sanitary but difficult to put into general use due to expense. The privy at Knotts Island operated successfully, but efforts to find someone to maintain it proved fruitless and the project was abandoned.⁴

About this same time Guilford County became the first county in the South to support a fulltime health officer.⁴ Unfortunately, the county commissioners did not consider the investment to be worthwhile. Other counties followed Guilford's lead, however, and local health improved across the state.

In 1935 Otto described work done in Columbus County, in southeastern North Carolina approximately 50 miles from the Atlantic Ocean.¹⁰ The county had an active public health department, but many residents considered its efforts to be "persecution" and would not accept treatment. As a result, 27.3% of the rural whites were infected, with an average egg output of 5,700 eggs per ml of stool. School children were more markedly affected, displaying a 34.4% infection rate. These data compared with a 1914 rate of 37.9%, representing a fairly negligible decrease. Of the blacks examined, only 12.3% were infected. Of these, the average egg output was around 2,000 per ml of stool.

Otto cites studies done in Crusco, a small settlement near a swamp in Columbus County. Of 49 schoolchildren examined, 77% of them were infected. One family without a privy was found to be completely infected. A young boy, the most heavily infected in the family, was passing 77,700 eggs per ml of stool. By comparison the average infection rates for Columbus County as a whole were 27% for adults and 34% for children. From this Otto concluded that hookworm only persisted as a chronic problem in isolated communities which resisted all attempts to introduce proper sanitation.

In 1937 Keller et al surveyed 70

North Carolina counties for hookworm.⁶ They found prevalence to be 12.3%, down from 36.6% during the eradication campaign. Infection rates by county varied from 0.9% in Durham County to 52.9% in Onslow County. The Coastal Plain continued to have the highest rate; 80% of all cases resided in that region. Besides the overall decrease in prevalence, the intensity of the infections had decreased to the point where only one in five positive cases displayed any overt symptoms. The average egg output was 3,100 eggs per ml of stool in whites and 1,600 per ml of stool in blacks.

The authors concluded that a marked reduction in hookworm disease had occurred, that the most improvement had taken place in the Piedmont and mountain regions and that the greatest problem was the continuing high rate of both incidence and prevalence in the Coastal Plain. Reasons for the decreased incidence were taken to be treatment in the Piedmont and mountains (since reinfection was rare in these areas) while decreases in the Coastal Plain were attributed to treatment and the sanitary privy law enacted in 1919. Improved sanitation in the public schools and mill towns generally was credited with lowering the rate of reinfection. Keller's group also felt that public education and physician cooperation were major factors in the control effort.

A survey was conducted in Forsyth County in 1937 on the prevalence of several intestinal parasites, including hookworm.¹¹ Hookworm prevalence in this county had been

23.8% during the Rockefeller campaign and had decreased to only 2.9% by 1937. This decrease was attributed to the sanitary privy law, consolidation of rural schools, public education, and establishment of a fulltime county health department. The survey of school children and their families found 1.8% of the children infected and 1.1% of the family members. Although the rate of helminth infection was low, infection with parasitic amoebae was high. Most of the amoebae were *E. histolytica*, suggesting that although the privy had helped eliminate the spread of helminths, it was a probable cause of ground water contamination and thus was not completely safe.

In 1938 an examination of rural whites in North Carolina showed a 12.3% incidence rate and an 11.4% prevalence rate of hookworm, a 69.3% reduction from the 1910-14 period. Of those infected, 33.3% had very light infections, 45.3% light, 20.0% moderate to heavy, and 1.4% very heavy. Since only heavy cases display symptoms, only 25% of those infected were considered "diseased." Studies showed a direct relationship between number of family members infected and intensity of infection. Of eight states surveyed (North and South Carolina, Mississippi, Alabama, Kentucky, Tennessee, Florida and Georgia), North Carolina had the third lowest hookworm prevalence rate.¹²

The most recent data on hookworm comes from state health laboratory statistics in several Southern states.¹³ From the period including

1950-54 the incidence rate in North Carolina was 12.8%, which is a 0.5% difference from the 1938 rate and is not statistically significant.

The incidence of hookworm disease in North Carolina has continued to decrease since the last statewide survey in 1954. Reasons for such a decrease include improved sanitation, public education, and an increased pride in North Carolinians in addition to the obvious medical improvements. Although a recurrence of hookworm in North Carolina seems highly unlikely, it might be advantageous to conduct limited surveys in each of the state's three geographic regions. Hookworm is a disease which must be kept under control so that we may always know the joy of going barefoot.

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JOHN SELDEN [1584-1654]

If a Man had a sore Leg, and he should go to an Honest Judicious Chirurgeon, and he should only bid him keep it warm, and anoint with such an Oil (an Oil well known) that would do the cure, haply he would not much regard him, because he knows the Medicine beforehand an ordinary Medicine. But if he should go to a Surgeon that should tell him, your Leg will Gangrene within three days, and it must be cut off, and you will die, unless you do something that I could tell you, what listening there would be to this Man!

Table-Talk, "Damnation"

Bromocriptine in the Treatment of Haloperidol-Induced Galactorrhea

Indira M. Vária, M.D., Jesse O. Cavenar, Jr., M.D.,
Ronald J. Taska, M.D., and Allan A. Maltbie, M.D.

GALACTORRHEA, the excessive or spontaneous flow of milk or the persistent flow of milk irrespective of nursing, can be a puzzling and difficult clinical problem. Hypothalamic and pituitary disorders can be causative of galactorrhea¹ and psychotropic drugs have also been implicated as etiologic agents.² While the phenothiazines, particularly chlorpromazine, are the psychotropic drugs most often reported to cause galactorrhea, haloperidol has also been reported to be capable of producing this condition. Although the exact mechanism of milk production and secretion is not known, prolactin is the essential hormone of lactogenesis and an elevated serum prolactin level is a constant finding in patients with inappropriate lactation.¹ Prolactin secretion is primarily controlled by the secretion of prolactin inhibiting factor, which is produced by the hypothalamus and transported via the hypothalamic-pituitary portal circulation to the anterior pituitary gland.³ Since dopamine can act directly on the pituitary gland resulting in a decrease in prolactin secretion, it is possible that this neurotransmitter is a prolactin-inhibitory factor.⁴ It is believed that antipsychotic drugs, such as haloperidol, being dopamine receptor antagonists, may

cause lactation by blocking the activity of prolactin inhibiting factor.³ An ergot alkaloid, bromocriptine mesylate, has been reported to inhibit puerperal lactation and to terminate breast secretion in patients with inappropriate lactation.¹ This same compound has also been reported to be effective in the treatment of phenothiazine-induced galactorrhea.² Our review of the literature, however, does not reveal any report in which bromocriptine mesylate has been used for the treatment of haloperidol-induced galactorrhea. It is the purpose of this communication to report such a case.

CASE REPORT

A 30-year-old female was admitted to a psychiatric facility with apparent symptoms of a manic episode characterized by hostility, agitation, hyperactivity, delusions of pregnancy, pressured speech, and flight of ideas. In an effort to control these symptoms rapidly, she was given haloperidol with the plan of initiating lithium therapy as soon as possible. Her haloperidol was gradually increased to 40 mg per day and her symptoms improved on that dosage. On the 14th day of her hospitalization, however, she developed profuse galactorrhea. An endocrine evaluation including skull X-rays, pregnancy test, and thyroid function tests were negative or normal. Her serum prolactin level was 145.6 ng/ml. She

had no recent history of breast feeding or oral contraceptive use. Treatment with bromocriptine mesylate 2.5 mg per day was begun in an effort to control her hyperprolactinemia and galactorrhea, but she was released from the hospital by a court decision before the effects of this therapy could be ascertained. She was continued on haloperidol, bromocriptine mesylate and trihexyphenidyl hydrochloride but took her medicine sporadically and was readmitted three weeks later in a manic phase, exactly as previously described. Upon admission, she was noted to have galactorrhea and her serum prolactin level was 281.2 ng/ml. Bromocriptine mesylate, 2.5 mg per day, was started and increased to 5 mg per day by the seventh hospital day. The patient was also given haloperidol 5 mg per day and lithium carbonate 300 mg b.i.d. By the 14th hospital day, her galactorrhea had markedly subsided and her serum prolactin level had fallen to 42 ng/ml. Haloperidol was discontinued on the 14th day because her clinical condition had improved greatly as her serum lithium level stabilized at therapeutic levels. Bromocriptine mesylate was discontinued on the 15th day. By the 16th day her galactorrhea had ceased completely and the serum prolactin level had fallen to 2.8 ng/ml. She was discharged and maintained on lithium carbonate only without further episodes of galactorrhea.

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DISCUSSION

In this communication we report the successful treatment of haloperidol-induced galactorrhea with bromocriptine mesylate. We believe it is important to know that at least some cases of haloperidol-induced galactorrhea will respond to this treatment because there are clinical situations in which rapid control of psychotic symptoms with haloperidol is desirable if not criti-

cal. Clearly, it is more advantageous to control the galactorrhea, if it should occur, with bromocriptine mesylate than to attempt to change to another antipsychotic drug which may be less effective in treating the psychosis or which may produce the same lactation side effect. One possible disadvantage of such combined haloperidol-bromocriptine therapy is the theoretical possibility that a dopamine agonist such as bromocriptine might negate some of

the dopamine antagonist effects of haloperidol thus reducing its antipsychotic effect.

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THOMAS SYDENHAM [1624-1689]

In writing the history of a disease, every philosophical hypothesis whatsoever, that has previously occupied the mind of the author, should lie in abeyance. This being done, the clear and natural phenomena of the disease should be noted — these, and these only. They should be noted accurately, and in all their minuteness; in imitation of the exquisite industry of those painters who represent in their portraits the smallest moles and faintest spots.

Medical Observations (3rd ed.), Preface (tr. by R. G. Latham in *Works*, Vol. 1)

Screening For Cervical Cancer: 1982 – An Update

William T. Creasman, M.D.,

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DURING a recent week, two young women were seen at one of the state's medical centers with Stage I carcinoma of the cervix. This in itself is not unusual; however, both of these patients had not had a Pap smear in two years. When asked why a Pap smear had not been obtained annually both women noted that the American Cancer Society (ACS) recommended that they needed a Pap smear only every three years.¹ As a result of the 1980 American Cancer Society's statement concerning screening interval in cervical cancer there are confusions and concerns that need to be addressed.

Historically, there has been a "yearly" Pap smear which was arbitrarily determined. Although some questions have been raised concerning the role of the Pap smear in reducing the incidence and death rates for carcinoma of the cervix, the fact remains that during recent years, nowhere in the world has there been a reduction in cancer of the cervix unless a screening program was active. The Pap smear remains the classic, ideal screening technique for cancer. Recent re-evaluation of the frequency of the Pap smear has been undertaken. Suggested changes and recommendations must be scrutinized

carefully before their acceptance; misinterpretation of the results could lead to disaster.

In 1976, the Walton Report from Canada was published.² Based on evaluation of data from some of the provinces, several recommendations were made. Women over 18 and "at risk" (sexually active female) should have an initial Pap smear. If the initial smear is negative a second smear should be taken one year later. If both smears are satisfactory and negative, subsequent Pap smears should be taken at three-year intervals until the age of 35, then at five-year intervals until the age of 60. If all of the Pap smears during the life of the patient are negative by the time she reaches 60 then the patient can be dropped from the screening program. The Walton Report did recognize a group of women who were at increased risk for the development of cervical cancer (the onset of sexual activity commenced in the mid-adolescent years and multiple sexual partners). The women at continued high risk should be screened annually. The Walton Report was generally accepted across Canada; however, implementation of the recommendations has varied between the provinces.

The American Cancer Society in its report on "the cancer related health checkup" essentially endorsed the Walton Report with some slight modification. It suggested that all asymptomatic women over the age of 20 and those

under 20 who are sexually active have a Pap smear annually for two negative examinations and then at least every three years until the age of 65. The pelvic examination should be done as part of the general physical examination every three years from 20 to 40 years of age and annually thereafter. Women at high risk should be tested more frequently.

The recommendation of the American Cancer Society was disturbing to many of the American clinicians who are primarily responsible for the primary care of the female patient. In particular, the American College of Obstetricians and Gynecologists (ACOG) responded in some detail to the ACS proposal.³ In addition, organizations such as the International Academy of Cytology stated that "until outstanding quality assurance systems are in place it is our belief that annual screening for cervical cancer represents the optimal approach to the early diagnosis of this disease."⁴ The ACOG stated that those patients at high risk (those who have had early sexual intercourse, have had multiple sexual partners, or multiple marital events) should be screened annually. Since a substantial proportion of women in the United States are at high risk for developing cervical neoplasia they should be made aware of these factors. As a result, the ACOG recommends annual cytological screening for cervical neoplasia for most women in the

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United States. Since the choice of any cytological screening interval is arbitrary and the factors dictating such a choice were complex, the screening interval in the low risk group should be an informed choice was arrived at by the patient and her physician.

Why have different investigators reviewing the same data drawn such varied conclusions and recommendations? Are the investigators drawing the same conclusions with different emphasis or is there a true difference in the interpretation of this material as can occur with any scientific interpretation? Is there a self-enhancing endeavor in any of these recommendations? All of the above may be true. In the context of this presentation, space does not allow a thorough consideration of all of the factors contributing to these recommendations. Attempt will be made to briefly discuss some of the background information on which the recommendations were based. Conclusions and recommendations will be presented.

In the not too distant past, questions were raised about whether the Pap smear was in fact fulfilling the screening tool criteria. Three characteristics are needed for screening to be advantageous: 1) the disease should have a serious consequence; 2) the treatment is better on screen-detected disease than on symptom-detected disease and; 3) there should be a high prevalence of detectable preclinical evidence of the disease. The Walton Report, the American Cancer Society and the ACOG all agree that increased screening has resulted in a decreased incidence and mortality from invasive carcinoma of the cervix. Concomitantly and perhaps just as important, there has been an increase in the detection of the preinvasive asymptomatic phase of the disease — cervical intraepithelial neoplasia (CIN). An increase in early stage disease detection has also been documented. There appears to be no disagreement concerning the end results in regard to an adequate screening program. The basic issue is the optimal screening interval. The recommendation of the ACS is derived

from data which would suggest that the transit time for carcinoma in situ to invasive cancer is 8-10 years. This assumes that CIN progresses in an orderly fashion to invasive cancer, and that a mathematical model is representative. Based upon these assumptions the transit time from carcinoma in situ to an invasive cancer in 5% of the population is three years or less. Therefore, those individuals at the extremely early end of the bell-shaped distribution would be undetected and fall through the "safety net" if a three-year screening interval were used. Physicians, particularly those in the referral centers, are seeing an increasing number of patients who are obtaining a Pap smear less frequently than each year and presenting with invasive disease. It appears that that number is greater than 5%. This phenomenon is being seen nationwide.

Several studies have been reported which would indicate that this biological model is difficult to put within the constraints of a mathematical model. A study from Toronto of 212 patients with invasive cancer noted that 42% of them had had a negative smear within five years.⁵ A report from Sweden indicated that 81% of 177 invasive cancer patients had previously been screened with a Papanicolaou smear.⁶ Forty-five percent of these had had negative smears within 4½ years and 25% were negative within two years of the diagnosis of cervical cancer. A most startling study from Seattle of 92 patients with early invasive carcinoma of the cervix noted that 51% of these individuals had had negative Pap smears within three years and 27% within one year of the time of diagnosis.* These are appreciable and frightening figures. Other than the fact that cancer can grow very rapidly in an individual patient, the accuracy of the Papanicolaou smear can vary considerably. It has been suggested that the false negative rate in CIN lesions ranges from 20% to 40%.

One must remember that the purpose of screening with the Papanicolaou smear is *not* to identify pa-

tients with invasive cancer, but to diagnose the disease in its asymptomatic, preclinical phase. A patient with preclinical disease has a greater chance that the disease process may be treated with a local, and in many instances, office-based therapy. The more advanced the disease when diagnosed, the more extensive the therapy, the greater the cost of treatment, and the poorer the prognosis. Because of the increased screening in the United States during the decade of the 1970s there has been a drop in both the incidence and death rate from carcinoma of the cervix. There have been 29,000 fewer cases of carcinoma of the cervix diagnosed and 7,000 fewer deaths than if the incidence and death rates had remained at the 1971 level for the subsequent 10 years.⁷ This has been a significant step forward in the management of this malignancy.

The only justification for a Pap smear less than annually is cost effectiveness. The reasons for more frequent Pap smear are 1) the sensitivity of the Pap smear is less than optimal; 2) the unpredictability of cervical disease and; 3) what is the price of a human life? Obviously we are all concerned about the cost of medical care. Yet when an annual screening program that has taken years to implement has proved effective why should changes be based on predictions from mathematical models and interpretations of disputed data? It is fully realized that the annual interval for Pap smear was arbitrarily designated but its efficacy has been proved without a doubt. If a new change in guidelines is followed, the results of this experiment will not be known for 10 to 20 years. If wrong, consequences can be disastrous. In England not recommending a Pap smear until the age of 35 resulted in a doubling of cancer deaths in women under the age of 35 from 1966 to 1976.⁸ It is interesting to note that after only six years the Walton Committee is to reconvene because its original recommendations have led to some disastrous results. Reportedly the new recommendations will be made to revert to the earlier practice of more

*Figge DC. Personal Communication.

frequent screening.

Until confirmatory data are available, we suggest the following in regard to optimal screening: 1) In the high risk patient (commencement of sexual activity in the mid-teens or multiple sexual partners) yearly pelvic exam and Pap smear should be performed. It should be recalled that a substantial proportion of the women in the United States are at high risk. 2) For the low risk patient, Pap screening interval should be individualized. An informed decision

should be made by the patient and her physician. 3) The traditional annual gynecological examination is a routine screen for other cancers and medical conditions. Historically, the "annual" Pap smear has been part of this tradition. 4) Cost effectiveness is of course important, but the role it must play in preventive medicine is complex and unclear. The emotional impact on the individual woman and her well-being must remain of paramount importance.

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HENRI DE MONDEVILLE [1260-1320]

It is impossible to know perfectly the part, if one is not acquainted with the whole, even in a gross way (*grosso modo*); so it is impossible to be a good surgeon if one is not familiar with the foundations and generalizations of medicine. On the other hand, as it is impossible to know the whole perfectly if we are not acquainted in a certain measure with each of its parts, it is impossible for anyone to be a good physician who is absolutely ignorant of the art of surgery, with a knowledge of its possibilities and its limitations.

Treatise on Surgery (tr. by J. J. Walsh)

After the First Death: Reflections on Poetry and Emergency Room Experience

Martha Faith McLellan

INTRODUCTION: Those of us who have practiced medicine long enough tend to forget the early uncertainties and fascinations of medicine, particularly those experiences which befell us before we got to medical school. Because medicine seems sometimes in its technological tread to stamp out the high poetry of these events, we offer as a stimulus to recall and to meditation about our chosen field these reflections by a recent college graduate. Miss McLellan presented her observations as a senior oration at Wake Forest University, May 16, 1982.

J.H.F.

WHEN life is in perpetual conflict with art, which triumphs? Who wins when the realities of suffering and death seem to make a mockery of intellectual pursuits? I have struggled with these questions and more in my attempt to synthesize the two most influential experiences of my college years: the study of poetry and my part-time job in the Emergency Department of North Carolina Baptist Hospital. The gap between the two activities has sometimes been great; it is difficult to soar on the "viewless wings of Poesy" when one's feet are firmly entrenched in the blood of unfortunate patients. In the beginning of my work, I could see no relation between my academic life and my work experience. I later became

convinced that it was absurd to even seek a common ground between them. After long reflection on these two parts of my life, however, I have come to consider the interrelation of my study of poetry and my involvement in emergency room life as crucial for the bestowing of meaning onto each other.

Last year, a young child in Winston-Salem was burned to death in his home when an arsonist attempted to kill his mother. The mother escaped, and her son became a helpless victim of adult anger. I was then studying the poetry of Dylan Thomas, and as I assisted in the futile resuscitation attempt, the words of Thomas's "A Refusal to Mourn the Death, by Fire, of a Child in London" came to mind: "After the first death, there is no other." A day earlier, the line had been only rhythm and words and sound. But that day, it was infused with meaning, giving hope of life in the midst of death. I had an almost overwhelming desire to recite the poem over his still body as a kind of incantation, a ceremony in which both victim and mourner would partake of the comfort in that haunting ending.

I was jolted by the significance of that event, primarily because of an experience which took place some months earlier, when I had just begun working. Two teenage girls whose car had been hit head-on by a drunk driver arrived in the emergency room in very critical

condition. My shock at the extent of their injuries was due not only to my newness at the job, but also to my realization that they were both younger than I and that staying alive often seems a matter of luck and chance. I felt a strong sense of inadequacy and helplessness as we cared for them. That night, after finally drifting into restless sleep, I had terrible dreams about them, convinced that they had both died. When I listened to a lecture on Milton the next morning, I couldn't concentrate on any of the words for wondering about their condition, hearing their screams, and seeing the floor and my shoes covered in their blood. At that moment, there seemed to be an enormous disparity between my academic and working lives, and I felt acutely isolated. My classmates could not participate in my experience; neither could I partake of an academic exercise which seemed so far removed from my experience. Thus I was surprised to later find the two areas of my life seemingly merged in the burned child's death.

Often at work, in trying to catch snatches of time to study, I repeated lines of poetry to myself as I performed routine duties. In some inexplicable way, the poetry echoing in my head helped ease the devastating pain I encountered every day. Other tried-and-true coping mechanisms, such as off-color jokes, morbid or inappropriate humor, are well-known. But what is there about

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Winston-Salem, N.C. 27103

the sounds and cadences of poetry that sustain us in "the heavy and weary weight of all this unintelligible world"? Is it simply another defense, raised in the face of overwhelming suffering and death, because as T. S. Eliot reminds us, "Humankind cannot bear very much reality"? I believe it is something deeper, perhaps more primitive than this.

The power of poetry lies in its ability to transcend experience, to smooth out rough places, to give meaning to hollowness. Moments of extraordinary clarity emerge, when the rhythms of words become one with the rhythms of life. Perhaps the crafted poetry of man recalls the

primordial rhythms of breathing and circulation, deep calling unto deep.

There is no answer, of course. The question about which all such speculation ultimately revolves is what makes people persevere, about what grace allows them to endure. Poetry thus becomes a bearer of grace, an instrument with power to sustain. The peculiar spirit of Wake Forest, with its willingness to speak of transcendence and to look for meaning beyond the confines of the classroom, has encouraged me to seek the broad implications of my experience. An environment unfraid of mystery has fostered questions and my search for answers.

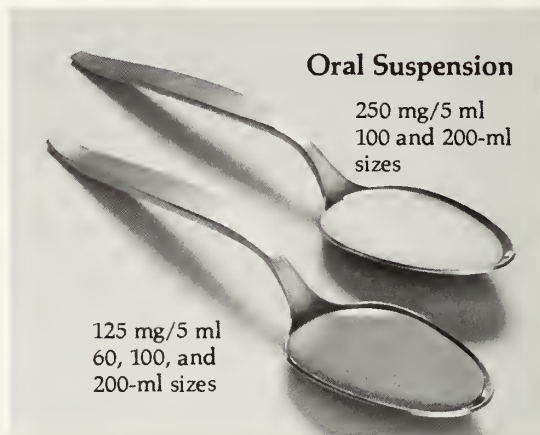
A man in his mid-20s suffered an inoperable neck injury in an automobile accident. He spent the last hour of his life in our emergency room, conscious and aware of his condition. Having been told of his imminent death, he was left to die, his family grieving with him. There can be no satisfactory explanation of such a loss, only easing of pain and glimmers of meaning. If the gift of words and the arrangement of them that becomes poetry, there is relief and comfort. Poetry speaks not only to something deep within us, but also to truth above and beyond us. I hope that young man knew, as I did, that "after the first death, there is no other."

LANFRANC OF MILAN [d. 1315]

It is necessary that a surgeon should have a temperate and moderate disposition. That he should have well-formed hands, long slender fingers, a strong body, not inclined to tremble, and with all his members trained to the capable fulfillment of the wishes of his mind. He should be well grounded in natural science, and should know not only medicine but every part of philosophy; should know logic well, so as to be able to understand what is written; to talk properly, and to support what he has to say by good reasons.

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Toxic Encounters of the Dangerous Kind

MDA — ANOTHER STUPEFACENTE

MDA is not the name for a new governmental agency or the initials of a new subway system. It refers to a member of a group of drugs called *phenylisopropylamines*. MDA (methylenedioxyamphetamine) appears to be the most popular member of this group in North Carolina where there has been a resurgence in its use. It seems as if hallucinogens in general (including LSD) are becoming popular again in our state.

MDA is a synthetic amphetamine derivative which now has no legitimate medical indication. Its street name is the "love drug;" it allegedly provides a rather peaceful psychedelic trip. Analysis of the chemical structure reveals a similarity to both mescaline and amphetamine. The drug is usually taken orally but can be used intravenously or by snorting. Also known as a psychomimetic amphetamine, MDA is taken by the user for its obvious "double action" — i.e., it alters perception and also produces a "high." It is considered by the cognoscenti to be a relatively mild mood-altering substance — certainly less than LSD, mescaline or psilocyn. The effective dose of MDA is about 80-150 mg with an onset of effects 30-60 minutes after ingestion and lasting for about eight hours. The peak "experience" occurs approximately 90 minutes after ingestion. This allegedly consists of a heightened sense of well-being and increased tactile sensations. There is said to be an increased perception of an inwardly focused experience and remarkable aesthetic enjoyment, especially of music. People "stoned" on MDA often focus on interpersonal relationships and have a strong desire to be with and converse with people. Although there is no evidence of an aphrodisiac effect it is said to produce very "warm feelings" toward others — hence its street name — the "love drug." Hallucinations, as we might expect from the indolalkylamines such as LSD, are not common except when high doses of MDA are taken.

So much for the good news. What happens when this so-called "benign" drug turns into a chemical nightmare? How would such a patient present to your office or emergency room? The bad reactions to MDA typically are manifest as severe sympathomimetic effects — hypertension, tachycardia, dilated pupils, ataxia, seizures, rigidity, marked diaphoresis, hyperthermia, coma — as well as with a severe panic reaction or, not commonly, a prolonged psychotic state. In the worst scenario there is rhabdomyolysis, disseminated intravascular coagulation, refractory shock, adult re-

spiratory distress syndrome and death. Certainly MDA does not deserve its benign street reputation. We see that methylenedioxyamphetamine has central and peripheral effects; the peripheral effects are probably mediated by the interaction of MDA with alpha adrenergic nerve endings, resulting in the release of endogenous 1-nor-epinephrine. The hyperthermia is probably mediated by both central and peripheral means.

Treatment of a "bad trip" resulting from MDA is by no means easy or clean cut. In spite of the fact that this drug has been around for over a decade, there is no consensus as to the best way to treat an overdose. Some recent recommendations suggest that the drugs of choice in the treatment of a bad case of MDA overdose might be *phentolamine mysylate* (Regitine®) — an alpha-adrenergic blocker, *methysergide maleate* (Sansert®), an inhibitor of 5-hydroxytryptamine (serotonin) and/or *phenobarbital sodium*. (Phenoxybenzamine) [Dibenzylin®] or prazosin [Minipress®] might also be employed because of their effect on alpha-adrenergic receptors, but no information was found in literature review.) Support of the cardiovascular and respiratory systems, of course, take top priority. MDA intoxication can closely resemble amphetamine intoxication, but it appears that the treatment is different — that is, chlorpromazine or halperidol, droperidol or acid diuresis probably will not reverse an MDA overdose. In fact, the interaction of chlorpromazine (Thorazine®) with MDA or other street drugs such as STP (the serenity-tranquility-peace pill, or DOM, 2,5-methoxy-4-methylamphetamine) or DMT (dimethyltryptamine) can produce a profound hypotension. It is fair to say that if you do not detect amphetamines in specimens from a patient presenting with classic clinical features of amphetamine overdose, you should consider the possibility of a hallucinogenic amphetamine derivative as the cause.

Another similar hallucinogenic amphetamine compound DOB has been increasing in popularity on the West Coast. This "trip inducer" is 2,5-dimethoxy-4-bromoamphetamine and often is sold to those wishing to purchase LSD or MDA. One of its street names is "Psychodrine." The results of a DOB trip include hypertension (especially systolic), hyperthermia, dilated pupils, hallucinations and, with increased dosage, panic, disorientation, violent behavior, seizures and CNA depression. The latter two features are associated with the concomitant ingestion of DOB and

ethanol. Excessive quantities of DOB can also cause persistent vasoconstriction. Diazepam is suggested for the CNS effects including seizures; heparin and alpha-adrenergic antagonists (e.g., phentolamine and tolazoline) have been tried interarterially for the relief of the peripheral ischemia. However, as with MDA, clinical experience with therapy has not been vast.

The foreign press often has a wonderful way with words. The Italian newsprint media often refer to an

illegal drug of abuse as a *stupefacente* and it means just what it sounds like it should mean.

RONALD B. MACK, M.D.
Associate Professor of Pediatrics
Bowman Gray School of Medicine
and Chairman, Committee on
Accidents and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics

OLIVER WENDELL HOLMES [1809-1894]

He had, in fact, an ancient, mildewed air,
A long gray beard, a plenteous lack of hair, —
The musty look that always recommends
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Editorials

SIR HANS KREBS (1900-81)

On November 22, 1981, Sir Hans Krebs died at Oxford at the age of 81. His odyssey could have taken place only in the 20th Century and serves as a testimonial to the upheavals of our times. Born in Lower Saxony at Hildesheim, a small city more than a thousand years old, once the seat of a major North German bishopric, his medical career started at Hamburg and ended in England. After graduating from medical school in Hamburg, he spent four years with Otto Warburg in Berlin before going to Freiburg. There he and his colleagues found that urea production is mediated by the ornithine-citrulline-arginine cycle, sufficient in itself to ensure the everlasting respect of the scientific community.

But the Germany of Adolf Hitler had no respect for people like Krebs who was fired in 1933 despite his achievements. He shortly found refuge in England where first at Cambridge and later at Sheffield he continued his investigations. It was at Sheffield that he worked out the tricarboxylic acid cycle, the Krebs' cycle, to join Meyerhof, Koch, his mentor Warburg, Laennec and so many others in the land of eponyms. Later he was to receive the Nobel Prize, to become a fellow of the Royal Society and to be knighted, but his name will endure more comfortably in the designation of that vital cycle where those mysterious acids, succinic, fumaric and their friends frolic.

That Sir Hans reached an almost mythic place in science before his death is beyond question. If some still doubt, they should know that one day last summer an attractive young lady came to work in the Biochemistry Department of one of our medical schools adorned by an orange t-shirt on which the Krebs' cycle was neatly inscribed in blue.

J.H.F.

ADVERTISING

The assimilation and application of new knowledge, particularly when it is rapidly accumulating, often stress societies seriously and strain our facilities for adaptation. So it is with modern medicine characterized by dramatically increased costs, the technological imperative, and a capacity to provoke greater and greater expectations from the sick and the worried

well. This pressure is showing also within the ranks of medicine in ways almost too numerous to count. To take a single example, the Federal Trade Commission continues to urge, at least indirectly, advertising by professionals. And professionals are advertising more, at least in North Carolina. A recent survey of newspaper advertising in seven North Carolina cities indicates that in 1981 opticians, chiropractors, and lawyers in the main took to the press with great enthusiasm. Advertising by professionals increased by almost 150% in five of seven cities surveyed. Data are not available from Greensboro and Winston-Salem but Twin City newspapers were far ahead in inches sold to professionals, 2,243 to 1,141 for second place Durham. The reasons for so much more assertion in Winston-Salem and Durham are unclear. Perhaps the newspaper ad salesmen are more aggressive or perhaps the fact that these two cities are sites of medical schools has something to do with it. No matter the reason, vigorous advertising campaigns have been mounted, presumably to the great satisfaction of the Federal Trade Commission.

J.H.F.

LIFE ON THE MISSISSIPPI — A THANK YOU NOTE

Perry and his colleagues¹ in St. Louis have recently called our attention to a syndrome of osteopenia and hypercalciuria in five young men for which a cause could not be found. Interestingly, the young men's ages were reported as 27, 37, 37, 54 and 57 years. Now this is a nice syntactical way of narrowing the generation gap. Given the Biblical expectation of threescore years and ten, it might have been presumed that middle age extends indefinitely from the 25th year. So those of us in our middle years, particularly those who have obtained membership in the half-century club, do wish to extend to Dr. Perry and his co-workers our deep appreciation for their readjustment of our temporal station in life. All efforts to delay the onset of the golden years are deeply appreciated.

J.H.F.

Reference

1. Perry HM III, Fallon MD, Bergfeld M, et al. Osteoporosis in young men: a syndrome of hypercalciuria and accelerated bone turnover. Arch Intern Med 1982;142:1295-1298.

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Aside from enabling patients to fall asleep more quickly and sleep longer, Dalmane seldom causes morning hangover. Most Dalmane patients feel alert and refreshed when they awaken. In 53 paired-night clinical studies comparing Dalmane and placebo in 2010 insomniac patients with a variety of secondary diagnoses, most Dalmane patients awakened more alert and refreshed, and less groggy and drowsy, than on nights when they had taken only placebo.¹ In a double-blind crossover study of

42 patients in private practice, approximately three as many patients reported feeling refreshed and alert upon awakening after a night on Dalmane (flurazepam/Roche) compared to placebo nights.² This difference was highly significant ($p < 0.001$). And a retrospective study of hospitalized patients who received Dalmane revealed a 3.1% incidence of side effects.³

While residual effects from Dalmane therapy are infrequent, patients should be cautioned about drinking alcohol, driving or operating hazardous machinery after ingesting the drug.

Efficacy and safety in a broad range of patient types.

Over 2000 clinical trials involving more than 10,000 patients have shown that Dalmane patients fall asleep sooner, sleep longer and experience fewer nocturnal awakenings.⁴ The safety and efficacy of Dalmane have been demonstrated in medical and surgical hospitalization patients, in patients seen in office practice and in elderly patients.⁵⁻⁸ Since the risk of oversedation, dizziness, or



tion and/or ataxia increases with larger doses in the elderly, it is recommended that the dosage be limited to 15 mg.

Moreover, the efficacy and safety of Dalmane for the treatment of insomnia have been demonstrated in thousands of patients with a variety of primary medical conditions, including cardiovascular, neuropsychiatric, endocrine-metabolic, gastrointestinal, genitourinary, respiratory and musculoskeletal disorders.¹ Dalmane (flurazepam HCl/Roche) is contraindicated in pregnancy and in patients hypersensitive to the drug.

Avoids rebound insomnia upon discontinuation.

Rebound insomnia—a worsening of sleep beyond pretherapy levels after drug discontinuation—has been reported as a potential clinical problem with some hypnotics.^{9,10} However, this problem has not been reported with Dalmane. In eight out of eight sleep laboratory studies, there were no reports of rebound insomnia.¹¹ When you prescribe Dalmane, you can be confident of efficacy that enhances therapeutic progress. Your insomniac patients can be assured of a restful night, night after night—a good start or a good morning.

References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Zimmerman AM: *Curr Ther Res* 13:18-22, Jan 1971. 3. Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther* 21:355-361, Mar 1977. 4. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 5. Meyer JA, Kurland KZ: *Milit Med* 138:471-474, Aug 1973. 6. Feller HL, Gibbons B: *Med Times* 101(8):130-135, Aug 1973. 7. Jacobson A et al: *Psychophysiology* 7:345, Sep 1970. 8. Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc* 27:541-546, Dec 1979. 9. Kales A, Scharf MB, Kales JD: *Science* 201:1039-1041, Sep 1978. 10. Kales A et al: *JAMA* 241:1692-1695, Apr 1979. 11. Monti JM: *Methods Find Exp Clin Pharmacol* 3(5):303-326, 1981.

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Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; in acute or chronic medical situations requiring restful sleep. Objective sleep laboratory data have shown effectiveness for at least 28 consecutive nights of administration. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended. Repeated therapy should only be undertaken with appropriate patient evaluation.

Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg recommended initially until response is determined.

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Specialty Societies

North Carolina Society of Plastic, Maxillofacial and Reconstructive Surgery

Andrew W. Walker, M.D.

The North Carolina Society of Plastic, Maxillofacial and Reconstructive Surgery held its 5th annual meeting in Pinehurst May 7 and 8, 1982. Dr. Jerome Adamson from Norfolk, Virginia, and Dr. Kenneth Pickrell from Durham were guest speakers at the Society's first scientific session. Rhinoplasty and its complications was the general topic. In addition, Dr. William Mullis of Charlotte and Dr. John Fagg of Winston-Salem discussed myocutaneous and free flaps at the orthopedic section of the North Carolina Society Annual Meeting.

On July 1, Blue Cross/Blue Shield of North Carolina initiated a pilot study and incentive program to encourage physicians to perform procedures in the office. By encouraging physicians to do selective cases in the office, hospital costs may be reduced. Plastic surgeons in this state have pioneered the use of ambulatory and office surgical facilities, showing these facilities can reduce hospital cost for selected procedures by as much as seventy-five percent.

The William T. Berkeley memorial lectureship was held in Charlotte, October 28 and 29, at Charlotte Memorial Hospital. The guest speaker this year was Dr. John McCraw of Norfolk, Virginia. He discussed "Horizons in Surgery" and "The Interface of Plastic Surgery with Obstetrics and Gynecology, Orthopedic and General Surgery."

The American Society of Plastic and Reconstructive Surgeons met in Honolulu, Hawaii, October 11-15, preceded by the American Association of Hand Surgery in Maui, October 7-10.

New plastic surgeons who have set up practice in North Carolina are Dr. James Shearer in Charlotte and Dr. John B. Gorman in Hickory.

NORTH CAROLINA SOCIETY OF INTERNAL MEDICINE

The New Medicaid Fee Schedule and the Internist

Phillip A. Sellers, M.D., Chairman
Committee on Third Party Liaison

If the proposed statewide fee schedule for practitioners is adopted as mandated by the State Legislature, internist's Medicaid payments will be somewhat better for outpatient services, but somewhat worse for inpatient services.

For outpatient procedures the primary care internist will be paid *more* — 100% *rather than the present* 90% of the 75th percentile of usual, customary, and reasonable charges. In addition, *rural* internists may be reimbursed more because the *higher* of the 75th percentile for urban and rural internist fee will be used for *all* internist reimbursement.

Inpatient internist's payments will be 90% of the 75th percentile of the usual, customary and reasonable charge as in the past. However, this will be based on the *lowest* profile of all specialties performing a given service. For example, an internist and all medical subspecialists will be reimbursed for a "limited" hospital visit based on a general practitioner's charges or profile (the lowest specialty charges).

Basically this means outpatient services will be based on the usual, customary and reasonable charges with physician profiles used as in the past. But for inpatient services, payment will be restricted for the profile of the specialty with the lowest charges. In essence, for inpatient services internist allowable charges will generally be less than their submitted charges.

It is important for internists that the third parties continue to use usual, customary and reasonable charges with specialty profiling. However, this concept is beginning to slip away.

OLIVER WENDELL HOLMES [1809-1894]

The old age of a physician is one of the happiest periods of his life. He is loved and cherished for what he has been, and even in the decline of his faculties there are occasions when his experience is still appealed to, and his trembling hands are looked to with renewing hope and trust.

Medical Essays, "The Young Practitioner"

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From the Desk of the Managing Editor

SOCIO-ECONOMIC SERIES

Local Health Coalitions: A Vehicle to Achieve Cost-Effective Medical Care In North Carolina

Ira M. Hardy, M.D.

This is the second in a series on socio-economic issues which impact on organized medicine. The JOURNAL offers these articles as a forum for debate and encourages comment from you, the reader, via letters and editorials.

—A.A.H.

The North Carolina Medical Society has long supported voluntary health planning at the local level. It has also sought to restrain the rapidly rising health costs related to the delivery of high quality medical care to our citizens.

At its May, 1982, meeting the House of Delegates approved the establishment of a Committee on Cost-Effective Medical Care which replaces the Committee on Health Planning and Development and the Committee on Medical Cost Containment. The purpose of this change was to recognize that health planning and cost containment activities were no longer discreet entities but were in reality interdependent, and needed to be addressed within the overall context of health planning. It is also recognized by the Society that success in achieving cost-effective medical care will require strong physician commitment at the local levels.

Over the past decade we have seen increasing federal incursions into the private practice of medicine in the form of mandated health planning programs and a retreat from the original legislative intent of the Professional Standard Review Organization programs to insure the provision of high quality medical care to those of our population covered under the Medicare (Title XVIII), Medicaid (Title XIX), and the Maternal and Child Health (Title V) programs. Each of these programs has increasingly emphasized cost containment at the expense of the quality of care considerations so important to the medical profession and our patients. This change in emphasis has created a justifiable concern among the medical community.

More recently we have seen a new group which has entered the health policy arena. These are the members of the business/industrial community who repre-

sent the largest non-governmental purchasers of health goods and services in the nation. They are now demanding a voice in the allocation of health resources and in the determination of acceptable cost levels for these resources. The initial reason for this more aggressive approach is the increasing cost burden they face in providing adequate health benefits to their employees. Business leaders have watched their health expenditures rise at an alarming rate and are under significant pressure to restrain this escalation. We should not underestimate the resolve of the business community to find solutions to their problems.

As a reaction to the concern of the business leaders and recognizing the need for developing a dialogue between consumers and providers, the American Medical Association initiated the Corporate Visitation Program in 1977. This step was well received by the business community and made possible the identification of a number of misconceptions held by both groups.

We are now seeing an emergence of health coalitions across the country, many of which are employer only groups which have excluded provider representation. The American Medical Association has come out in support of medicine/business health coalitions at the local level which include physicians, hospitals, business leaders, third party payors, and other interested parties from the private and public sectors. A report has been distributed in support of such provider-consumer groups which has been endorsed by the American Medical Association, American Hospital Association, the national Blue Cross-Blue Shield, Health Insurance Association of America, AFL-CIO, and the Business Roundtable. It is reasonable to anticipate that such health coalitions will become increasingly important.

There are many reasons that the creation of health coalitions should be initiated by the physician community. Among these is the certainty that the business leadership will seek relief from their cost pressures with or without provider input. This has already been the experience in many parts of the country. Another reason physicians need to become involved with the business community is the potential impact of closed panel health maintenance organizations and other "cost containment" measures on the private practice of medicine. Business has the fiscal and political clout to make changes in the means by which health care is delivered to its employees and by which it is financed.

Short term "solutions" may cause long range dislocations in our health delivery system which will create greater problems over the long term. These reasons are, however, primarily defensive in nature and should not be the primary rationale for physician initiation of local health coalitions.

The physician community brings with it unique knowledge which will be crucial to the development of positive adjustments in the current delivery and financing of health care. Our perception of the health arena is broader in scope than other groups, and we understand the vast complexity of the current health system. We also have the historical perspective which can allow for an understanding of how the health system has evolved. This knowledge is invaluable in seeking national adjustments necessary to create positive change. As physicians, we also understand the need to maintain a balance between cost saving approaches and the maintenance of high quality medical care for our patients. It is the physicians who can best serve as a moderating influence on the tendency to

look for the "solution" rather than identifying the small adjustments necessary to achieving real progress. As the hub of the health delivery system, we are singularly able to provide the leadership to create positive change. It is this capability which should provide the impetus for physicians to involve themselves in initiating medicine-business health coalitions at the local level.

The needs of the current health system can no longer be addressed in a vacuum. The private sector will have to develop a continuing dialogue, sharing concerns and ideas, if progress is to be made. Each participant, provider and consumer alike, brings unique and valuable talents to the challenge of insuring a continuation of the provision of high quality, accessible health care at an affordable cost. Health coalitions at the local level provide one of the most promising means for this goal to be achieved. The opportunity presented by private sector cooperation is too great to ignore, and non-cooperation presents risks which are unacceptable.

JOHN WOLCOT ("Peter Pindar") [1738-1819]

Astronomers should treat of stars and comets; Doctors of *assa faetida* and vomits, And apoplexies, these light troops of Death.

That use no ceremony with our breath Ague and dropsy, jaundice and catarrh The grim-look tyrant's heavy horse of war.

Farriers should write on farcys and the glanders; Bug-doctors, only upon bed-disorders; Farmers on land, ploughs, pigs, ducks, geese and ganders;

Nightmen alone, on aromatic ordures The artists should on painting solely write;

Like David, then they may "good things indite." But when the mob of *gentlemen* Desert their province, and take up the pen,

The Lord have mercy on the art! Their crow-quills can no light impart.

Farewell Odes for 1786, Ode V



When mild
to moderate pain
is a side effect
of "Fitness"

RUFEN[®]
(ibuprofen)

measures up...
at a reasonable
cost!

**A Single-Entity Pain Reliever
As-Good-As or Better-Than Codeine
Combinations**

"...particularly effective in soft tissue disorders including sports injuries,"¹ Rufen stops pain at the site of injury and inflammation, not at the level of central perception. There is no dulled sensorium, no special need for warnings about driving or cautions about use of machinery. Your patient gets fast, effective pain relief...potent anti-inflammatory action...excellent tolerance...*plus* the exceptional economy that only Rufen offers. Next time one of your patients asks for pain relief, let Rufen show you how it measures up.



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See next page for brief summary of prescribing information.

Measure RUFEN[®] (ibuprofen) against "standard" mild to moderate pain

Measure RUFEN[®] (ibuprofen) against any mild to moderate pain

Dental pain and episiotomy pain are predictable, reproducible "standards" that make possible objective comparisons of effectiveness of different analgesic agents.

- Measured against 15, 30 and 60 mg doses of codeine phosphate in a double-blind study of 287 patients, 400-mg doses of ibuprofen proved "significantly better than codeine on almost all pain intensity, degree of relief and duration of analgesia parameters."²
- Measured against a propoxyphene-acetaminophen combination for pain relief after 3rd molar extractions, ibuprofen proved equally effective and caused fewer side effects. Ibuprofen was associated with faster recovery, evidenced by more rapid reduction of trismus and return to normal function.³
- Measured against post-episiotomy pain in 30 patients, "ibuprofen was effective in treating the swelling as well as pain...during the first and worst days. Therefore, it is not only the analgesic but also the anti-inflammatory effect of ibuprofen that are the beneficial factors..."⁴

RUFEN

- single-entity, peripheral-acting analgesia
- powerful treatment of both pain and inflammation
- better tolerated than aspirin
- no narcotic risk, red tape, records

Acetaminophen + codeine combination

- combined drugs act partly through central opioid pathways
- virtually no treatment of the inflammatory component
- combined side effects of two drugs—warning required about driving or operating machinery; possible respiratory depression with alcohol, tranquilizers, other common medications
- narcotic precautions required

- matchless economy in a modern NSAID

References:

1. Hart FD, Huskisson EC, Ansell BM in Hart FD (editor): Drug Treatment of the Rheumatic Diseases, 2nd Ed, Adis Press, Balgownie Australia, 1982, p. 30.
2. Rondeau PL, Yeung E, Nelson P: Canad Dent Assoc J 46:433-439, 1990.
3. Selwyn P and Giles AD: Br Jrl of Clin Practice, Supplement 6, Safe and effective analgesia following dental surgery: A comparison of brufen and distalgic. Pg 87-90, 1980.
4. Taina E: Curr Med Res Opinion, 7:423-428, 1981.



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And Rufen[®] Measures Up Best

RUFEN[®] (ibuprofen) Tablets

INDICATIONS AND USAGE: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in the long-term management of these diseases. Safety and effectiveness have not been established for Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain. Treatment of primary dysmenorrhea.

CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, angio-edema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory drugs (see WARNINGS). **WARNINGS:** Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see CONTRAINDICATIONS). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration, perforation, or gastrointestinal bleeding can end fatally, however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease, and only after consulting the ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy, this therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: Coumarin-type anticoagulants. The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin: Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS: Incidence greater than 1%. **Gastrointestinal:** The most frequent adverse reaction is gastrointestinal (4 to 16%). Includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). **Central Nervous System:** dizziness*, headache, nervousness. **Dermatologic:** rash* (including maculopapular type), pruritus. **Special Senses:** tinnitus. **Metabolic:** decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS). *Incidence 3% to 9%.

Incidence less than 1 in 100. Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma. **Dermatologic:** vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome and alopecia. **Special Senses:** hearing loss, amblyopia (blurred and/or diminished vision, scotomata and/or changes in color vision) [see PRECAUTIONS]. **Hematologic:** neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura eosinophilia, decreases in hemoglobin and hematocrit. **Cardiovascular:** congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Allergic:** syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasms (see CONTRAINDICATIONS). **Renal:** acute renal failure in patients with preexisting significantly impaired renal function decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria. **Miscellaneous:** dry eyes and mouth, gingival ulcers, rhinitis.

Causal relationship unknown. Gastrointestinal: pancreatitis. **Central Nervous System:** paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri. **Dermatologic:** toxic epidermal necrolysis, photo-allergic skin reactions. **Special Senses:** conjunctivitis, diplopia, optic neuritis. **Hematologic:** bleeding episodes. **Allergic:** serum sickness, pseud erythematous syndrome, Henoch-Schönlein vasculitis. **Endocrine:** gynecomastia, hypoglycemia. **Cardiovascular:** arrhythmias (sinus tachycardia, bradycardia, and palpitations). **Renal:** renal papillary necrosis.

OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine, alkaline diuresis may benefit.

DOSAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flareups of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d.

Dysmenorrhea: 400 mg every 4 hours as necessary

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for the relief of pain. Do not exceed 2,400 mg per day

CAUTION: Federal law prohibits dispensing without prescription.

Bulletin Board

New Members

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White, Mack Willis, III, (IM) Nalle Clinic Primary Care Ctr., 7523 Little Avenue, Charlotte 28211

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Chiulli, Richard Allen, (GS) 310 Hill Road, Southern Pines 28387

PITT

Mitchell, Joyce Marie, (EM) Rte. #1, Box 416-E, Bethel 27812

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Cox, Russell Jackson, (PD) 518 S. Van Buren Rd., Ste. 5, Eden 27288

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Chaudhry, Abdul Ghafoor, (CD) 2800 Blue Ridge Blvd., Ste. 306, Raleigh 27607

Hull, Keith Lowell, Jr., (N) 1909 Sturbridge Court, Raleigh 27612

What? When? Where?

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME programs sponsored or cosponsored by these schools automatically qualify for AMA Category 1 credit toward the AMA's Physician Recognition Award, and for North Carolina Medical Society Category A credit. Where AAFP credit has been requested or obtained, this also is indicated. 2. The "place" and "sponsor" are indicated for a program only when these differ from the place and source to write "for information."

In State

December 3-4

"Renal Dysfunctions and Hypertensive Disorders in Pregnancy"

Place: Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834., 919-758-5200

December 22

"Acute Myocardial Infarction and Congestive Heart Failure"

Place: Sanford

Fee: \$9

Credit: 2 hours, AAFP applied for

Info: R. S. Cline, M.D., Central Carolina Hospital, 1135 Carthage Street, Sanford, NC 27330, 919-774-6518



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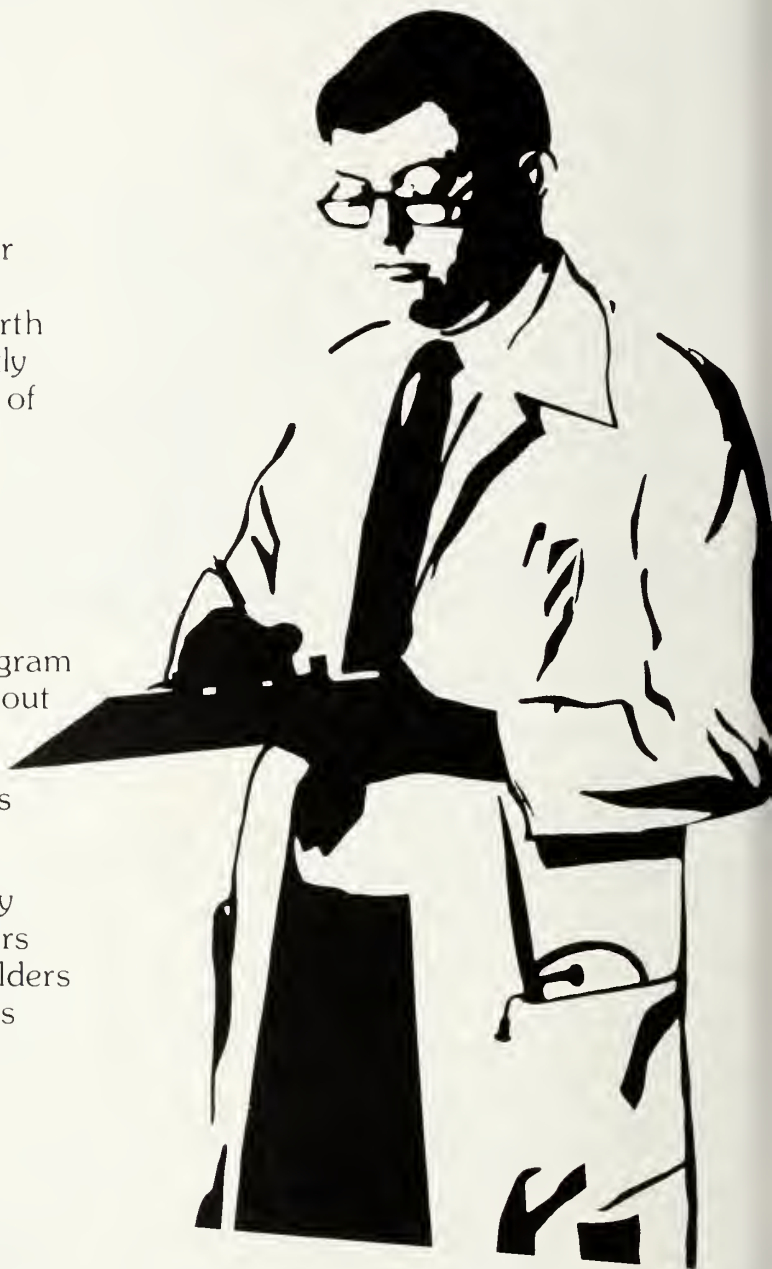
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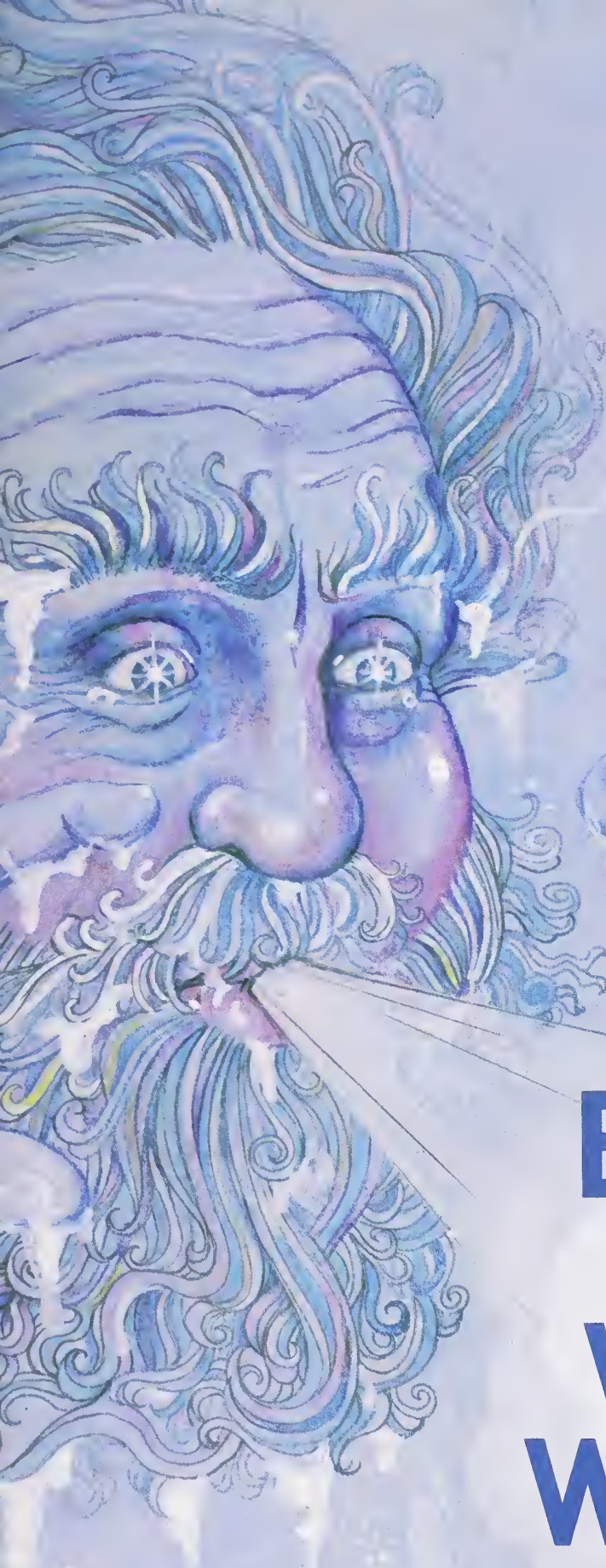
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WINTER
WEATHER!**

RU-TUSS

Dispel the Clouds of Fall and

RU-TUSS[®]

TABLETS

Each prolonged action tablet contains: Phenylephrine Hydrochloride 25 mg
• Phenylpropanolamine Hydrochloride 50 mg • Chlorpheniramine Maleate 8 mg
• Hyoscyamine Sulfate 0.19 mg • Atropine Sulfate 0.04 • Scopolamine Hydrobromide 0.01 mg • Each Ru-Tuss tablet acts continuously for 10 to 12 hours.

Symptomatic Relief of Sneezing and Nasal Congestion

Comprehensive decongesting, antihistaminic and anti-secretory reliever for patients with nasal, sinus and other upper respiratory irritation.

- Eases breathing • Reduces sneezing
- Reduces tearing • Dries the drip

One tablet b.i.d. gives round-the-clock relief to adults and older children (12 years and over).



Inter Respiratory Discomfort

RU-TUSS[®]

EXPECTORANT

Each fluid ounce contains: Codeine Phosphate 65.8 mg • (WARNING: MAY BE HABIT FORMING) Phenylephrine Hydrochloride 30 mg • Phenylpropanolamine Hydrochloride 20 mg • Pheniramine Maleate 20 mg • Pyrilamine Maleate 20 mg • Ammonium Chloride 200 mg • Alcohol 5%

Symptomatic Relief of Coughing with Nasal and Bronchial Decongestion

Full range symptom-reliever for patients with air way congestion in the upper chest as well as the nose and throat.

- Blocks the cough
- Loosens mucus
- Reduces sneezing
- Eases breathing
- Tasty, so it's easy to take



To Relieve the Symptoms of Winter Weather Upper Respiratory Distress

RU-TUSS[®] / RU-TUSS[®] TABLETS EXPECTORANT

RU-TUSS[®]

Tablets

DESCRIPTION

Each prolonged action tablet contains

Phenylephrine Hydrochloride	25 mg
Phenylpropanolamine Hydrochloride	50 mg
Chlorpheniramine Maleate	8 mg
Hyoscyamine Sulfate	0.19 mg
Atropine Sulfate	0.04 mg
Scopolamine Hydrobromide	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours.

Ru-Tuss Tablets are an oral antihistaminic, nasal decongestant and anti-secretory preparation.

INDICATIONS AND USAGE Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues. Phenylephrine and phenylpropanolamine combine to exert a vasoconstrictive and decongestive action while chlorpheniramine maleate decreases the symptoms of watering eyes, post nasal drip and sneezing which may be associated with an allergic-like response. The belladonna alkaloids, hyoscyamine, atropine and scopolamine further augment the anti-secretory activity of Ru-Tuss Tablets.

CONTRAINDICATIONS Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

WARNINGS Ru-Tuss Tablets may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

PRECAUTIONS Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with glaucoma, or urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See Warnings).

OVERDOSAGE Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

ADVERSE REACTIONS Hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

DOSAGE AND ADMINISTRATION Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

HOW SUPPLIED:

Bottles of 100 Tablets

Bottles of 500 Tablets

Federal law prohibits dispensing without prescription.

NDC 0524-0058-01

NDC 0524-0058-05

DISTRIBUTED BY:

Boots Pharmaceuticals, Inc.
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MANUFACTURED BY:

Vitarine Company, Inc.
Springfield Gardens, New York 11413

RU-TUSS[®]

Expectorant

DESCRIPTION

Each fluid ounce of Ru-Tuss Expectorant contains

Codeine Phosphate	(WARNING: MAY BE HABIT FORMING)
Phenylephrine Hydrochloride	
Phenylpropanolamine Hydrochloride	
Pheniramine Maleate	
Pyriminamine Maleate	
Ammonium Chloride	
Alcohol	

Ru-Tuss Expectorant is an oral antitussive, antihistaminic, nasal decongestant and expectorant preparation.

INDICATIONS AND USAGE Ru-Tuss Expectorant is indicated for symptomatic relief of respiratory congestion associated with pharyngitis, tracheitis, bronchitis, and allergic rhinitis. Also, for the temporary relief of symptoms associated with hay fever, allergic rhinitis and congestion and cough due to the common cold.

CONTRAINDICATIONS Hypersensitivity to antihistamines. Concomitant use of hypertensive or antidepressant drug containing a monoamine oxidase inhibitor is contraindicated.

Ru-Tuss Expectorant is contraindicated in patients with glaucoma, bronchial asthma and in women who are pregnant.

WARNINGS Ru-Tuss Expectorant contains codeine phosphate, therefore, the patient should be warned of the potential that this drug may be habit forming. Ru-Tuss Expectorant may cause drowsiness. Patients should be warned of the possible additive effect of taking antihistamines with alcohol, hypnotics, sedatives and tranquilizers.

PRECAUTIONS Patients taking Ru-Tuss Expectorant should avoid driving a motor vehicle or operating dangerous machinery (See Warnings). Caution should be taken with patients having hypertension, diabetes, hyperthyroidism and cardiovascular disease.

Caution should also be used in patients with pulmonary, hepatic or renal insufficiency.

ADVERSE REACTIONS Ru-Tuss Expectorant may cause drowsiness, lassitude, dryness of mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, and insomnia. Overdoses may cause respiratory depression, excitation, delirium, tremors, euphoria, metabolic acidosis, stupor, tachycardia and convulsions.

DOSAGE AND ADMINISTRATION Adults: 1 or 2 teaspoonfuls, orally, every 4 hours, not to exceed 10 teaspoonfuls in any 24-hour period.

Children 6 to 12 years of age: $\frac{1}{2}$ the adult dose, not to exceed 6 teaspoonfuls in any 24-hour period. Children 2 to 6 years of age: $\frac{1}{2}$ teaspoonful every 4 hours, not to exceed 3 teaspoonfuls in any 24-hour period. Children under 2 years of age: directed by a physician.

HOW SUPPLIED: (16 fl. oz.)

Pint Bottles

Federal law prohibits dispensing without prescription.

NDC 0524-



Boots Pharmaceuticals, Inc.
Shreveport, Louisiana 71106
Pioneers in medicine for the family

January 9-12
"Advanced Clinical Teaching Skills"
Place: Rougemont
Credit: 20 hours
Info: Katherine Munning, Ph.D., Duke-Watts Family Medicine Program, 407 Crutchfield Street, Durham, NC 27704, 919-471-2571

January 12
"The Investigation of Sudden Death — Beginning at the Scene"
Place: Greenville
Fee: \$50
Credit: 6 hours, AAFP applied for
Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

January 14, 15 & 16
"Clinical Hypnosis and Habit Control"
Place: Durham
Fee: \$150
Credit: 16 hours
Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

January 22
"Fourth Annual Pulmonary Disease Update"
Place: Greenville
Fee: \$50
Credit: 6 hours, AAFP applied for
Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

January 24-26
"Getting Started in Medical Computing"
Place: Durham
Credit: 20 hours
Info: Cindi Easterling, Office of Continuing Medical Education, Duke University Medical Center, Box 3306, Durham, NC 27710, 919-684-6485

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January 27
"The Fourth Duke Cardiology Seminar"
Place: Durham
Credit: 6½ hours
Info: Judy Berry, Division of Cardiology, Box 31211, Duke University Medical Center, Durham, NC 27710, 919-684-2255

February 9
"Biological Aspects of Child Psychiatry"
Place: Greenville
Fee: \$25
Credit: 3 hours, AAFP applied for
Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

February 14-18
"Microsurgery Workshop"
Place: Durham
Fee: \$600 (\$550 for Resident in Training)
Credit: 40 hours
Info: Donald Serafin, M.D., PO Box 3372, Duke University Medical Center, Durham, NC 27710

February 20-23
"Improving Residency Rotations: Curriculum Planning and Negotiations"
Place: Rougemont
Credit: 20 hours
Info: Katharine Munning, Ph.D., Duke-Watts Family Medicine Program, 407 Crutchfield Street, Durham, NC 27704, 919-471-2571

February 21-23
"Selected Topics For the Practicing Clinician"
Place: Durham
Credit: 24 hours, AAFP applied for
Info: Cindi Easterling, Office of Continuing Medical Education, Duke University Medical Center, Box 3306, Durham, NC 27710, 919-684-6485

January & February
"1st District Medical Society Post Graduate Course"
Place: Edenton, Elizabeth City, and Ahoskie
Credit: 12 hours, AAFP applied for
Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

Out of State

December 6-10
"IV International Symposium in Perinatology,"
"III Course in Perinatal Medicine"
Place: Mexico
Info: Continuing Medical Unit, Montes Urales 800, Lomas Virreyes, Deleg. Miguel Hidalgo, 11000-Mexico, D.F.

January 8-15
"1983 CME Cruise/Conference on Medical-Legal Issues"
Place: Puerto Rico, St. Thomas, Nassau
Credit: 18 hours
Info: International Conference, Suite C, 189 Lodge Avenue, Huntington Station, NY 11746

January 10-12
"The Brain, Biochemistry, and Behavior-6th Arnold O. Beckman Conference in Clinical Chemistry"
Place: Tarpon Springs, Florida
Credit: 14½ hours
Info: Dr. Robert Habig, Duke University Medical Center, Box 2902, Durham, NC 27710, 919-684-3905

January 30-February 5
"First Annual Duke Winter CME: The Prevention and Treatment of Surgical Infections"
Place: Nassau, Bahamas
Credit: 25 hours
Info: Cindi Easterling, Office of Continuing Medical Education, Duke University Medical Center, Box 3306 Durham, NC 27710, 919-684-6485

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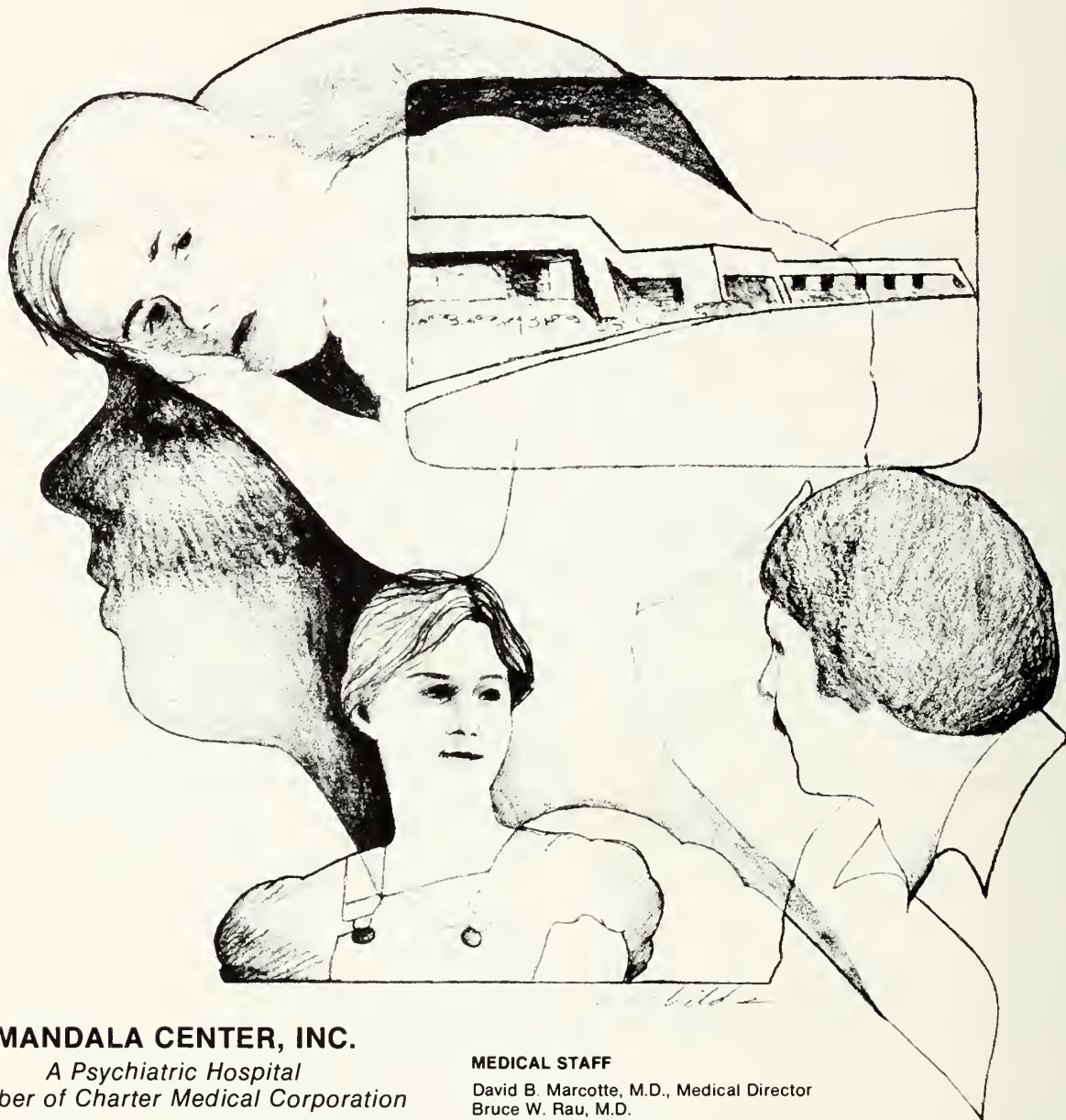
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February 17-21

"Pediatrics in Puerto Rico: The 10th Annual Pediatric Symposium of Children's Hospital National Medical Center"

Place: Puerto Rico

Info: Susan Weiss, Children's Hospital National Medical Center, 111 Michigan Avenue, NW, Washington, DC 20010, 202-745-3000

February 21-23

"Gold Coast Seminar: Surgery"

Place: West Palm Beach, Florida

Credit: 8 hours

Info: Cindi Easterling, Office of Continuing Medical Education, Duke University Medical Center, Box 3306, Durham, NC 27710, 919-684-6485

February 28-March 4

"Annual Meeting of The US-Canada International Academy of Pathology"

Place: Atlanta, Georgia

Info: Dr. Nathan Kaufman, 1103 Chefee Avenue, Augusta, Ga 30904

April 18-29

(Application deadline February 2)

"Clinical Cytopathology for Pathologists"

Place: Baltimore, Maryland

Credit: 125 hours

Info: John K. Frost, M.D., 110 Pathology Building, The Johns Hopkins Hospital, Baltimore, Md 21205

The items listed in this column cover the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh 27611, two months prior to the month in which they are to appear.

North Carolina Medical Society Auxiliary

HELPLINE

The North Carolina Medical Society Auxiliary has begun a telephone HELPLINE, a program which offers support and information to physicians and their families affected by alcoholism or drug abuse. The number is 919/295-2877. Help will be offered on an anonymous basis.

Gail Clark of Pinehurst, North Carolina, has been named chairman of the HELPLINE committee. A statewide network of committed volunteers will be asked to respond to calls from their area after initial screening by the chairman. The committee will give information on the Medical Society Committee on Physician's Health and Effectiveness (known as P.H.E.P.), a program which has provided help and intervention to physicians with alcohol or drug problems for over four years. It will also provide information about other resources such as Al-Anon (a self-help program for families of the chemically dependent), Families Anonymous (a program for parents of chemically dependent children), and Alcoholics Anonymous.

Alcoholism and drug abuse affects approximately one in ten people in our population, perhaps even higher numbers in the medical profession. Four to six family members are affected by each chemically dependent person. It is hoped that the formation of

HELPLINE will be a first step for family members seeking information that may aid in recovery.

Anyone interested in volunteering, please contact Gail Clark at the HELPLINE number, 919/295-2877. A training session in conjunction with the P.H.E.P. volunteers will be available for those persons who wish to become involved. No experience is required, and a minimal amount of training should equip the volunteers for the task we have set for ourselves.

DO YOU OR SOMEONE YOU LOVE HAVE
A PROBLEM WITH ALCOHOL OR DRUGS?

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News Notes

Duke University Medical Center

An exercise class for patients on kidney dialysis has begun under the leadership of Dr. Rose Shalom.

"Even the best dialysis provides less than 10% of normal kidney function," Shalom said. "The uremic state (not clearing all the poisons in the body) causes a generalized impairment of muscle function, including the heart. People on dialysis may also have increased risk of atherosclerosis and heart attacks. Many have high blood pressure that's hard to control."

The dialysis outpatients are enrolled in a six-month training program in Duke University Preventive Approach to Cardiovascular Disease (DUPAC). The exercise conditioning program was organized by Shalom with chief of nephrology Dr. Vincent W. Dennis and cardiologist Dr. R. Sanders Williams, director of DUPAC. It is the only program of this type in the Southeast, Shalom said.

The class meets three times a week for one hour of exercise. The participants ride stationary bicycles, do calisthenics and walk or jog around the track.

"We want to improve their heart function, blood pressure, muscle strength and work capacity," Shalom said. "More broadly, we would like to improve their sense of confidence, self-esteem and independence."

"The aim is to see if a program similar to the one for heart patients would help the quality of life of dialysis patients," Shalom added. "We hope to show them they can do the things other people do."

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of North Carolina

One of the first scientific studies of the controversial drug dimethyl sulfoxide (DMSO) for the treatment of a specific rheumatic disease has begun at the medical center.

DMSO is one of many drugs that will be studied as part of Duke's new Center for Cooperative Study of Rheumatic Diseases, which was made possible by a five-year, \$400,000 grant from the National Institutes of Health.

The first study will examine the effectiveness of DMSO for treating a rheumatic disease called scleroderma, associated with hardening of the skin and loss of movement in the joints.

"This will be the first comprehensive scientific study to see if DMSO is really effective for the treatment of scleroderma," said Dr. Ralph Snyderman, chief of Duke's division of rheumatic and genetic diseases.

The new center will also examine methotrexate as a treatment for rheumatoid arthritis.

Eight other centers around the country will cooperate with Duke in testing new drug therapies for rheumatic diseases. At Duke alone, approximately 40,000 patients with rheumatic diseases are seen each year. "Only a limited number of patients will be studied at first," Snyderman said, "and admission to the studies will be by physician referral only."

Coordinating the drug studies at Duke will be Dr. Richard Pollison, rheumatologist and assistant professor of medicine, and Dr. Avery Henderson, medical research associate in the division of rheumatic and genetic diseases.

Tinnitus, a ringing or buzzing noise in the ears, affects approximately 80% of the population as aging occurs, said Dr. Patrick Kenan, associate professor of otolaryngology. He spoke to the 24th Annual Postgraduate Course sponsored by Duke University Medical Center.

The most common causes of tinnitus, he said, are the natural degenerative process that accompanies aging and excessive noise exposure.

Because there currently are no drugs to cure or eliminate tinnitus, Kenan and his colleagues treat people who have extreme cases with behavioral modification, psychotherapy and biofeedback.

Two devices that sometimes are of help to patients are hearing aids and "masking" devices that look like hearing aids.

"Hearing aids help diminish the effect of tinnitus by drawing in outside noises," Kenan said. "Most of us recognize a tendency to readily adapt to outside noises but we don't adapt as easily to internal noises. If the person can better hear what's going on around him, he's less likely to pay attention to the tinnitus. Masking devices work on the same premise; basically we're treating internal noise with external noise."

Masking tapes of natural noises, such as an incoming ocean tide or rain on a tin roof, are sometimes used to help patients sleep.

In addition to aging and excessive noise exposure, tinnitus may be caused by high doses of drugs such as aspirin, antidepressants, heart medications and anti-cancer drugs.

Five North Carolina counties will continue to get special help in fighting their high infant mortality rate thanks to a two-year renewal grant by the Robert Wood Johnson Foundation. The \$270,360 grant will support a rural infant care program started two years ago by the medical center.

"Although it's too early to tell if we've actually been able to reduce the infant mortality rate, we know that the program has greatly improved the level of obstetrical care given in those counties," said Dr. Fred Jelovsek, an associate professor of obstetrics and gynecology and the project's director.

The counties — Franklin, Granville, Person, Warren and Vance — were targeted for the health care program because their infant mortality rates are the highest in the state, the physician said. North Carolina has the fourth highest infant mortality rate in the nation.

The original 1980 Robert Wood Johnson Foundation grant provided funds for organizing perinatal nurse-staffed clinics in each of the counties, using existing health department facilities.

Duke is one of 35 medical centers involved in a national effort to collect data about primary pulmonary hypertension, a life-threatening, relatively rare disease.

Dr. Robert Peter, professor of cardiology and associate director of the Cardiovascular Lab at the medical center, is coordinator of a patient registry, which was established by the National Heart, Lung and Blood Institute to help gather information about the disease.

"Because this condition is relatively uncommon," Peter said, "no single medical center has been able to accumulate data on a significant number of patients. The registry will help us gather data on a large number of patients and may help researchers find new methods of early detection and effective therapy."

Peter said a second benefit of the registry may be the development of more effective methods of diagnosing and treating more pulmonary hypertension.

Primary pulmonary hypertension results when arteries in the lungs become blocked, although the causes of blockage are still unknown. Peter said the disease can occur in all ages.

Patients eligible for the registry include 1-year-old children through adults. The 35 cooperating medical centers together hope to enroll at least 150 patients each year during the three-year study.

The National Reye's Syndrome Foundation has awarded Dr. Charles R. Roe, a medical center pediatrician,

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trician, a \$37,699 grant to support his research on the treatment of the rare, often fatal, children's disease.

Co-investigators at UNC-Chapel Hill are Dr. J. Douglas Mann, associate professor of neurology and Dr. Lorean A. O'Tuama, professor of neurology. Consulting on the study is Dr. David Millington, research associate professor in the Department of Environmental Sciences and Engineering at UNC-CH.

Roe said that in the beginning a victim seems to follow "a normal course of either chicken pox, influenza or a respiratory illness. Within a few days, the condition worsens, and the child becomes irritable and combative." Persistent vomiting is a common complication, he said, and some children may slip into a coma or a near comatose state.

Roe is testing the theory that the brain swelling associated with Reye's Syndrome is caused by the body's inability to rid itself of toxic substances.

Scientists can't explain what causes the increase in toxic substances, Roe said, but he suspects a major dysfunction in metabolism. That dysfunction might explain the high levels of salicylic acid (aspirin) often found in children with Reye's syndrome.

Camp Kaleidoscope, a camp for chronically ill children who receive some of their treatment at Duke, was attended by 70 children between the ages of 6 and 17 this year.

The camp began in 1980 from an idea proposed by Duke play therapy director Kathy Merritt and Duke pediatric social work director Brandy McDaniel.

"At Camp Kaleidoscope we try to integrate both of the child's worlds — the healthy world and the world of their disease," Merritt said. "We allow them to do things that they are often isolated from or restricted from doing."

The camp is staffed by medical professionals from Duke and is free for the children, who have illnesses like leukemia, kidney disease, cystic fibrosis, cancer and sickle cell anemia.

A medical center pathologist, Dr. William W. Johnston, has received a service award from the American Society of Clinical Pathologists. Johnston, who is director of Duke's division of cytopathology, was chosen as the recipient of the society's Commission on Continuing Education Distinguished Service Award.

The award is given each year by the society to recognize members who make outstanding contributions to its workshops and education programs. Johnston is a past chairman of the society's council on cytopathology, the committee responsible for planning workshops and seminars. He is also president of the American Society of Cytology.

Dr. Sheldon Pinnell, a specialist in hereditary skin diseases, has been named chief of dermatology in the

Department of Medicine. Pinnell replaces Dr. Gerald Lazarus, who left to become chairman and professor of dermatology at the University of Pennsylvania in Philadelphia.

A professor of medicine, Pinnell came to Duke in 1973 following a fellowship at the Max Planck Institute for Biochemistry in Munich, West Germany. He received his bachelor's degree from Duke University and his medical degree from Yale University.

The newly formed American Society for Virology has elected Dr. W. K. Joklik as its first president.

Nationally known for his research on viruses, Joklik was elected during the first annual meeting of the society, Aug. 2-5, at Cornell University in Ithaca, N.Y. Joklik is James B. Duke Professor and chairman of the Department of Microbiology and Immunology. He is also a member of the National Academy of Sciences.

More than 1,200 virologists from North America and overseas attended the meeting.

Page A. Anderson, associate professor of pediatrics and assistant professor of physiology, received a \$28,600 grant from the American Heart Association to support the project, "The Fetal and Neonatal Left Ventricle."

Jorge V. Bartolome, assistant medical research professor of pharmacology, received a \$27,170 grant from the American Heart Association to study "Neuronal and Hormonal Regulation of Cardiac Growth and ODC."

William W. Shingleton, professor and chief of general and thoracic surgery, and director of the Comprehensive Cancer Center, received a \$68,249 grant from the National Cancer Institute for a Clinical Cancer Education Program.

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Lyn A. Thet, assistant professor of the Department of Medicine, received a \$39,792 research grant from the National Heart, Lung and Blood Institute to study "Surfactant: Physical, Functional and Structural Changes."

David W. Scott, professor of immunology, was awarded a \$116,817 research grant from the National Institute of Allergy and Infectious Diseases to study "Mechanism of Tolerance and Triggering in Lymphocytes."

Saul M. Schanberg, professor of pharmacology, received a \$38,750 research scientist award from the National Institute of Mental Health for his study "Neurotropic Drugs, Hormones, and Brain Functions."

Vincent W. Dennis, associate professor in the Department of Medicine, received a \$46,544 national research service award from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. His area of training is kidney structure and function in health and disease.

Mohamed B. Abou-Donia, associate professor of pharmacology, received a \$64,178 research grant from the National Institute of Environmental Health Sciences. Abou-Donia is studying "Model for Organophosphorus Neurotoxicity."

David W. Sedwick, assistant medical research professor in the Department of Medicine and the Department of Microbiology, received a \$73,894 grant from the National Cancer Institute for his study of "Antifolate-Induced Misincorporation of UDR in Human Cells."

Richard S. Metzgar, professor in the Department of

Microbiology and Immunology, received a \$209,047 grant from the American Cancer Society for a program, "Immunodiagnosis of Human Pancreatic Cancer."

Michael K. Reedy of the Department of Anatomy received a \$27,000 grant from the Muscular Dystrophy Association to fund a project of "Weighing Myofibrils by Scanning Microinterferometry."

Chia Sheng Lin, assistant professor of anatomy, received a \$58,140 research grant from the National Institute of Neurological and Communicative Disorders and Stroke. Lin is studying the structure and function of the visual cortex.

Edwin B. Cox, assistant professor in the Department of Medicine and director of the Cancer Center Database, was awarded a \$58,105 grant from the National Cancer Institute to fund "Cancer Patient Data Control Exploratory Studies."

Henry Kamin, professor of biochemistry, received a \$90,206 research grant from the National Institute of General Medical Sciences to study "Biological Oxidations in Mitochondria and Microsomes."

John W. Moore, professor of physiology, received a research grant of \$74,619 from the National Institute of Neurological and Communicative Disorders and Stroke to learn computer methods for physiological problems.

Francis A. Neelon, associate professor of medicine, received a \$61,664 national research service award from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study endocrinology and diabetes.

Gail R. Marsh, associate professor in the Department of Psychiatry, received a \$55,466 research grant from the National Institute of Neurological and Communicative Disorders and Stroke for electrophysiological studies in cognitive psychology.

Max A. Woodbury, professor of community and family medicine and computer science, received a research grant of \$56,532 from the National Institute of Aging for Longitudinal models of correlates of aging and longevity.

Charles Tanford, professor in the Department of Physiology received a research career award of \$32,292 from the National Institute of General Medical Sciences to study the structure of proteins.

Harold C. Strauss, associate professor in the division of cardiology and the Department of Pharmacology, received a research grant of \$108,346 from the National Heart, Lung and Blood Institute. Strauss is studying the characterization of cardiac pacemaker activity.

Robert A. Rosati, associate professor of medicine and director of clinical epidemiology, received a \$155,665 award from the National Library of Medicine for biomedical communications.

Redford B. Williams Jr., professor in the Department of Psychiatry and associate professor in the Department of Medicine, received a \$38,467 grant from the National Institute of Mental Health to study "Behavioral Mechanisms in Cardiovascular Diseases."

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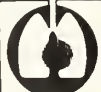
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Williams also received a \$72,300 research grant from the National Heart, Lung and Blood Institute to study psychosocial factors and outcome in coronary disease.

Thomas E. Frothingham, professor of pediatrics, received a \$242,787 grant from the division of medicine for residency training in general pediatrics.

Harold J. Harris, associate professor of psychiatry, received a \$61,430 grant from the National Institute of Mental Health for graduate training in child psychiatry.

James T. Moore, assistant professor of psychiatry and community and family medicine, received a \$77,500 education and training grant from the Department of Health and Human Services for a geriatric medicine fellowship program.

Randy L. Jirtle, assistant professor of radiology and pathology, received a \$51,261 grant from the National Cancer Institute to study "Microwaves, Hyperthermia and Tumor Circulation."

Peter K. Smith received a \$24,350 grant from the National Heart, Lung and Blood Institute for surgical treatment of cardiac arrhythmias.

The Bowman Gray School of Medicine Wake Forest University

Dr. Robert L. Capizzi has been named director of the Cancer Research Center at the Bowman Gray School of Medicine.

His appointment as director of the center, professor of medicine and head of the school's Section on Hematology/Oncology was effective Sept. 1.

Capizzi was professor of medicine and pharmacology at the University of North Carolina School of Medicine where he also was co-director of the Division of Hematology/Oncology.

He succeeds Dr. Charles L. Spurr, who has been director of Bowman Gray's Cancer Research Center during its first ten years of operation. Spurr will continue as professor of medicine and director of the Piedmont Oncology Association.

Dr. Capizzi has served on the faculty of the University of North Carolina School of Medicine since 1977. He formerly was acting chief of the Section on Medical Oncology at Yale University School of Medicine, where he also was an investigator with the Howard Hughes Medical Institute.

He is the author of more than 50 scientific papers which have been published in professional journals. He also was associate editor of the 1980 Yearbook of Drug Therapy.

A consultant to the National Cancer Institute, Capizzi has served on a number of national committees related to cancer research.

He holds the B.S. degree from Temple University and the M.D. degree from Hahnemann Medical College. He completed residency training and postdoctoral research training at Hahnemann Medical College and the Yale-New Haven Medical Center.

A team of architects, engineers, doctors and physicists at the Bowman Gray/Baptist Hospital Medical Center has begun preparations for installing a machine which uses magnetism to find disease.

The nuclear magnetic resonance (NMR) machine, with its 6,000-pound magnet, will be housed in the medical center's diagnostic radiology area. The machine was ordered in the spring and is expected to be ready to use during the winter. It is thought to be the first ordered for a North Carolina medical center and will be one of only a few in the nation when it goes into operation.

The decision to order the NMR machine was made following a major international nuclear magnetic resonance meeting at Bowman Gray last fall.

NMR is expected to be useful initially in examining the brain for problems such as cancer, in examining the nervous system for such diseases as multiple sclerosis and for studying blood vessels.

Medical center doctors hope that the machine eventually will permit detection of many medical problems in areas of the body other than just the head at a much earlier stage than now is possible.

Bowman Gray has enrolled 108 new medical students, chosen from 4,881 applicants. The class includes 30 women and six minority students.

Representing 19 states, the incoming medical students received their undergraduate education at 46 colleges and universities.

Sixty five students — 61% of the class — are from North Carolina. They were selected from 552 North Carolinians who applied.

The class includes graduates from 12 North Carolina colleges and universities, with the largest number, 20 students, coming from the University of North Carolina at Chapel Hill. There also were 17 graduates of Wake Forest University, 12 graduates of Duke University, eight Davidson College graduates and two from North Carolina State University.

In addition to the new medical students, 31 new graduate students have been enrolled.

The total medical student enrollment is 430. Enrollment in the biomedical graduate studies program will be 86.

Dr. Vardaman M. Buckalew, professor of medicine and physiology, has been appointed chairman of the Research Review Subcommittee of the American Heart Association, North Carolina Affiliate, for 1982-83.

Dr. K. Patrick Ober, assistant professor of medicine (endocrinology/general medicine), has been appointed to the Board of Directors of the North Carolina Affiliate of the American Diabetes Association.

**University of N.C.
School of Medicine &
N.C. Memorial Hospital**

North Carolina Memorial Hospital is one of seven medical centers in the country chosen to test the effect of interferon on acute lymphocytic leukemia (ALL) in children. The study, which is the first of its kind, will involve 18-25 patients nationwide.

It is designed to determine if interferon is an active agent against ALL and to study dosage levels and side effects, according to Dr. Robert J. Wells, assistant professor of pediatrics. "We also will be looking at the effect of interferon on a subsequent course of chemotherapy," Wells said.

Interferon is a protein produced by certain cells of the body involved in natural defense against disease. It has been tested as an anti-cancer agent in clinical trials since 1972, but has been made available only within the past year in sufficient amounts for significant testing in groups of cancer patients.

Wells said there is preliminary data on a small number of children with leukemia where interferon had a measurable effect on lowering the number of leukemic cells. "We will be trying to determine whether or not interferon can be shown to have enough of an anti-leukemic effect to make further investigations worthwhile," he said.

Wells said it is possible that interferon might destroy leukemic cells by either acting directly upon them or by enhancing the patient's body defense mechanisms.

All participants in the study will be volunteer ALL patients between the ages of three and 18 who have had a second relapse of the disease. "By this time in the course of the disease, it is generally accepted that these patients have no realistic hope of cure by any conventional chemotherapy now known or by bone marrow transplantation," Wells said.

Each participant will be a patient on the Clinical Research Unit at N.C. Memorial Hospital and will be given interferon for a 28-day period during which the effects of the drug will be carefully monitored. Each patient then will receive standard chemotherapy treatment.

Wells said acute lymphocytic leukemia accounts for 35% of all childhood leukemia. Chemotherapy is effective in curing the disease in about half of the patients with ALL.

The Clinical Research Unit study is one of seven nationwide being coordinated through the Children's Cancer Study Group in Los Angeles. Other institutions participating are: Children's Hospital of Philadelphia; Children's Hospital Medical Center, Cincinnati; James W. Riley Hospital for Children, Indianapolis; University of Minnesota, Minneapolis; Children's Orthopedic Hospital, Seattle; and Los Angeles Children's Hospital.

The Clinical Research Unit at N.C. Memorial is part of a network of federally supported research centers aimed at discovering the causes of complicated disor-

ders and developing better ways to treat them.

New services for persons with hearing losses are being offered in the School of Medicine.

Included among the services offered are free speech, hearing and language screenings every Friday afternoon. The clinics are located in Wing D of the medical school. Recently completed renovations have added central air conditioning, new clinic rooms and improved audiological facilities.

The new services include assistance for those who need hearing aids. Members of the audiology staff will evaluate a patient's hearing loss and the need for a hearing aid. Patients can try different aids, which are stocked for demonstration, and the staff will assist in the purchase of an aid of the patient's choice from a private vendor.

The center also offers classes for persons with hearing losses, emphasizing proper use and maintenance of hearing aids, family adaptation and techniques for improved communication, including speech reading when necessary.

For more information on the division of speech and hearing sciences clinics or for an appointment, call 966-1006.

Scientists from throughout the country visited the University of North Carolina at Chapel Hill to participate in laboratory workshops on the latest techniques of genetic engineering.

The workshops, sponsored by the Program in Molecular Biology and Biotechnology, focused on DNA sequencing, general DNA technology and the chemical synthesis of DNA oligonucleotides, according to Dr. Marshall H. Edgell, director of the University's molecular biology program.

"UNC was one of the earliest universities in the country to be involved in recombinant DNA technology," Edgell said, "and therefore we felt it was appropriate that we take a leadership role in teaching the techniques of advanced molecular genetics. These are the same techniques which provide the backbone of modern genetic engineering and have fueled the current burgeoning number of biotechnology firms."

Edgell said the three-week workshop on DNA cloning and sequencing held in July was only the second program of its kind in the country. "We exposed students to the myriad techniques available to manipulate DNA molecules, as well as both of the powerful DNA sequencing methods," he said, adding that the program was a very intensive one designed to give students extensive hands-on experience."

"The one-week workshop on chemical synthesis of DNA held in August was the first of its kind in the United States," Edgell said. "Both workshops were very successful and attracted a student body of national character. We had students from as far away as Berkeley, Calif., and Lewiston, Maine."

The program in Molecular Biology and Biotechnol-

ogy was established earlier this year to promote and coordinate genetic engineering research and education at UNC-CH. The major participating degree-granting units at this time are bacteriology, biochemistry, biology, chemistry and genetics.

Edgell said a major goal of the program is to organize academic activities which will accelerate the diffusion of molecular genetic technology into the research community. As part of the effort, the program is developing a series of degree options designed to train research scientists to operate at the highest levels in either an academic or an industrial setting and has accepted its first students.

Visiting scientists who participated as teachers in the two summer workshops included: Pieter Wensink, Brandeis University; Wayne Barnes, Washington University; Richard Losick, Harvard University; Kan Agarwal, University of Chicago; Jonathan Seidman, Harvard University and Howard Coyer, P-L Biochemicals, Inc.

Faculty members from UNC-CH who participated were: John Newbold, associate professor of bacteriology and workshop coordinator; Edward Barry, professor of biology; Patricia Maness, assistant professor of biochemistry; Jack Griffith, associate professor of bacteriology; Clyde A. Hutchinson III, professor of bacteriology; Darrell W. Stafford, professor of biology; and Kenneth Bott, associate professor of bacteriology.

The appointment of Dr. Thomas F. Boat as professor and chairman of the Department of Pediatrics has been announced by Chancellor Christopher C. Fordham III.

Boat's appointment, effective Aug. 15, is for a five-year term as department chairman. An Iowa native, Boat comes to Chapel Hill from Case Western Reserve University in Cleveland, Ohio.

His primary education, patient care and research interests are in children's pulmonary diseases and cystic fibrosis. He was a member of the pediatric pulmonary and cystic fibrosis center at Rainbow Babies and Children's Hospital, a part of the Case Western Reserve hospitals.

Boat received his higher education in Iowa, earning his B.A. in 1961 from Central College and his M.S. in 1964 from the University of Iowa.

He is a member of the American Academy of Pediatrics, the Society for Pediatric Research, the American Association for the Advancement of Science and several other honorary and professional societies.

Dean Stuart Bondurant of the School of Medicine praised Boat as a dedicated and skilled pediatrician and respected teacher. "Dr. Boat's research in the field of lung diseases of children has greatly improved our understanding and our ability to treat these diseases," Bonurant said. "I am confident that he will give great leadership to our Department of Pediatrics as it continues to extend its distinguished contribu-

tions to the health of the children of North Carolina and the nation."

Dr. Larry W. Arnold, research assistant professor of bacteriology, has received a special fellowship from the Leukemia Society of America.

The \$37,000 award, one of 70 research scholarships and fellowships granted this year, will allow Arnold to concentrate on research in immunology, the study of the body's immune defense system against disease in order to bolster its own natural ability to fight leukemia. The fellowship lasts for two years.

Arnold is a Nebraska native who earned his B.S. degree in microbiology from the University of Nebraska at Lincoln in 1973 and his M.S. in 1976 and Ph.D. in 1979 in immunology and microbiology from the University of Nebraska Medical Center. He had post doctoral training at UNC-CH.

The Leukemia Society will award nearly \$3 million in grants this year to 165 scientists at 75 institutions. Other UNC-CH researchers receiving society funding are Dr. Arthur H. Lockwood, assistant professor of anatomy and member of the UNC-CH Cancer Research Center, and Dr. Michael Jeffrey Black, special fellow in the Department of Biochemistry and Nutrition.

The United States Public Health Service has notified the division of physical therapy of the Department of Medical Allied Health Professions at UNC-CH that it intends to renew Grant 149. The \$150,000 grant funds post-graduate studies for physical and occupational therapists in maternal and child health care. This year's budget included funds for recruitment of minority and disadvantaged students, fellows and for development of a new medical school elective course on the role of physical therapy in a variety of practice settings.

Paul L. Munson, Sarah Graham Kenan professor emeritus of pharmacology and endocrinology, was presented with the William F. Neuman Award of the American Society for Bone and Mineral Research at the society's annual meeting in San Francisco. He was recognized "for distinguished achievement in the field of bone and mineral research" and awarded a plaque and a check.

Samuel Hitt, director, Health Sciences Library, was named the 1982 recipient of the Marcia C. Noyes Award at the Recent Medical Library Association annual meeting in Anaheim, Calif.

E. Chaney, associate professor of radiology, D. Huang, associate physicist, and S. Williams, radia-

tion technician student, radiation therapy, won an award for best scientific exhibit at the annual meeting of the American Association of Physicists in medicine held in New Orleans, Aug. 1-5. The title of the exhibit was "Evaluation of Lead Acrylic as a Filter for Contaminant Electrons in Megavoltage Photon Beams."

George Johnson Jr., professor and vice chairman, chief division of vascular surgery, was an invited speaker to the Japanese Symposium on Portal Hypertension held in Tokyo, Japan, July 10-11. His presentation was titled, "Current Management of Bleeding Esophageal Varices in the United States." He also lectured on "Peripheral Arterial Diseases in the United States," at the Kyushu University in Fukuoka, Japan, on July 12, and attended the International Symposium on Idopathic Portal Hypertension in Tokyo, July 16-17.

David E. Eifrig, professor and chairman, ophthalmology, was an invited speaker at Queensland Ophthalmological Society, Brisbane, Australia, on May 17-31. He spoke on "Intraocular Lens Implantation."

Joseph D'Ercole, associate professor, and Alan Stiles, chief resident in pediatrics, attended a meeting called "A Lung Growth Workshop" in Montreal May 31-June 3, 1982. This meeting is sponsored by National Institute of Heart, Lung and Blood. The results of the workshop will be published as a supplement to *Pediatrics* sometime this fall.

East Carolina University School of Medicine

The School of Medicine settled into its first permanent home during July and August when faculty and staff moved their offices and laboratories into the new Brody Medical Sciences Building.

The \$26 million facility, located adjacent to Pitt County Memorial Hospital, consolidates for the first time the majority of the school's academic departments, teaching areas and support services. The 451,000-square-foot-building features spacious lecture halls, modern faculty and teaching laboratories, and a 500-seat auditorium.

Faculty and staff moved the school's delicate equipment themselves, but the bulk of the venture was handled by a local commercial moving company. Despite temperatures in the 90s and frequent rain, it took only four weeks to relocate the school from the ECU main campus to the medical center two and a half miles across town.

A typical floor in the Brody Building is shared by two departments, such as physiology and pharmacology, and has labs and seminar rooms that the depart-

ments jointly use in their teaching programs. Most of the faculty laboratories and adjacent offices were designed by faculty members when planning started on the building six years ago.

The School of Medicine clinics are on the first floor of the building and have a separate parking area and entrance for patients.

The facility also offers convenient access to the Health Sciences Library, which moved into the building in December 1981.

The School of Medicine accepted 64 North Carolina residents into its first-year class in August.

The students represent 33 counties in the state. Seventeen of the students are women and 12 are minorities.

Last fall the medical school enrolled 52 students in the entering class. The school now has a total enrollment of 201 students.

A European pharmaceutical company has selected a laboratory at the School of Medicine as one of two sites in the country for research on a new drug that may relieve angina.

The laboratory is under the direction of Dr. Jamal Mustafa, a pharmacologist who specializes in cardiovascular research. The other laboratory selected by Degussa Chemicals of West Germany is at the University of California-Los Angeles.

The drug under investigation is Dilazep, a medication used for several years in Western Europe and Japan to treat patients suffering from angina. Mustafa has conducted several studies that link the drug with adenosine, a natural compound in the body that may serve as the regulator of blood flow to the heart.

Researchers believe adenosine may be the compound in the body that naturally increases the size of blood vessels and maintains flow in the heart. Mustafa said Dilazep may be effective in some patients with angina because it inhibits the destruction of adenosine. The drug may also prove to be effective against hypertension, heart attack and sickle cell anemia.

The study is funded by a \$70,000 grant from the pharmaceutical company.

Emergency department physicians at the School of Medicine now have access to a Poisindex system, the first component to be available in the development of a regional poison control center at Pitt Memorial Hospital.

Dr. E. Jackson Allison, chairman of emergency medicine, says the next step will be the addition of a 24-hour telephone service for poison information. He said the service should be available by the end of the year.

Eight faculty members at the School of Medicine have received academic promotion. The physicians are Lee R. Trent to assistant professor of family medicine; Yash P. Kataria to professor of medicine; and William R. Walker to associate professor of psychiatric medicine.

The basic scientists are Donald R. Barnes to associate professor of pharmacology; Donald R. Hoffman to professor of pathology and laboratory medicine; John T. Bray to associate professor of surgery; Paul S. Strausbauch to associate professor of pathology and laboratory medicine; and John C. Yeager to associate professor of physiology.

Dr. Julie A. Nickelsen, assistant professor of family medicine, was a visiting professor in the Department of Family Medicine at the State University of New York at Buffalo July 15-16. Nickelsen presented a conference entitled "Documentation of Resident Experience" while in Buffalo.

Dr. S. Gregory Iams, associate professor of physiology, and Dr. Mona M. McConnaughey, lecturer in pharmacology, coauthored an article in the July issue of *Experientia*. The article was entitled "Hypothyroidism Lowers Blood Pressure, Adenylate Cyclase and Na^+ , K^+ , and Ca^{++} — ATPase Activities in the Normotensive and Spontaneously Hypertensive Rats."

Steve Blumenthal, research technician in physiology, collaborated with Iams and McConnaughey on the article.

The North Carolina Heart Association recently awarded two Department of Physiology faculty members grants totaling \$12,000. Dr. Richard Athey, assistant professor, received \$6,000 to study "The Role of the Microcirculation in Ischemic Gut Syndrome During Shock or Acute Stress."

Dr. John C. Yeager, associate professor, received \$6,000 for his study of "Magnesium Deficiency and Coronary Artery Spasm." In addition Yeager attended the Gordon Conference on Magnesium in Biomedical Processes and Medicine held August 2-6 in New Hampshire. During the meeting, Yeager presented a paper for discussion entitled "Thermographic Evidence that Magnesium Deficiency Induced Coronary Artery Spasm in the Dog."

Dr. Edward M. Lieberman, professor of physiology, received a \$214,139 grant for the study of "Neuron-Glia Interactions at Nerve Fibers and Their Synapses" from the United States Army Research Office.

Dr. Dennis A. Revicki, instructor of family medicine, collaborated with two faculty members in the School of Education at UNC-Chapel Hill, Dr. Roberto

Rubin and Dr. Gary Stuck, on an article appearing in the summer issue of *Educational and Policy Analysis*. The article was entitled "A Model for Assessing the Degree of Implementation in Field Based Educational Programs."

The August issue of *Chest* included three articles coauthored by Dr. Allen F. Bowyer, professor of medicine, Dr. Lynn H. Orr, assistant professor of medicine, and Jody Ingram, clinical coordinator, collaborated with Bowyer in writing "The Presence of Jeopardized Myocardium in Patients with Positive Stress Tests Soon After Myocardial Infarction." Orr and Dr. Douglas C. Privette, clinical assistant professor of medicine, coauthored "A Method to Analyze Left Ventricular Wall Motion Appropriate for Nuclear, Echo and Angiographic Studies." Bowyer collaborated with former resident Dr. Lynn Anderson on the third article, "Use of a Radiolucent Balloon Flo-tation Catheter During Coronary Arteriography."

Dr. Joseph E. Williamson, assistant professor of emergency medicine, Dr. E. Jackson Allison Jr., chairman of the Department of Emergency Medicine, and Dr. Randolph M. Williams, clinical instructor of surgery, are the authors of an article which appeared in the August issue of *Annals of Emergency Medicine*. The article was "Fractures of the Hand Associated with Riding the Mechanical Bull."

Dr. Robert P. Dillard, assistant professor of pediatrics, and Dr. Melvin S. Swanson, associate director of medical education, have received a \$2,000 grant from the Mead Johnson Company. The title of their project is "A National Study on the Present Practice of Pediatricians in Newborn Care Education."

Dr. Seymour Bakerman, chairman of Department of Pathology and Laboratory Medicine, and Dr. Prabhaker G. Khazanie, assistant professor of pathology and laboratory medicine, are the authors of "Calcium Metabolism and Hypercalcemia" in the July issue of *Laboratory Management*.

Dr. James G. Jones, chairman of the Department of Family Medicine, attended the International Forum of Family Medicine Education Meeting of the Society of Teachers of Family Medicine held in August in San Juan, Puerto Rico. Jones presented "Certification of the Family Physician in the United States."

Three associate professors in the Department of Biochemistry collaborated on an article which appeared in the June issue of *Biochemical Medicine*. Dr. G. Lynis Dohm, Dr. Hisham A. Barakat and Dr. George J. Kaspersek coauthored "Measurement of *in*

Vivo Protein Synthesis in Rats during an Exercise Bout."

Edward B. Tapscott, research assistant, was also a collaborator on the article.

Dr. John P. DaVanzo, professor of pharmacology, has been reappointed by Gov. James B. Hunt Jr. to serve on the executive committee of the North Carolina Board of Science and Technology.

DaVanzo also recently coauthored an article with Paul Bolin entitled "The Influence of Isolation and Aminoxy-Acetic Acid on GABA in Muricidal Rats." The article appeared in the August issue of *Psychopharmacology*.

Dr. Mary Beth Foil, a second-year resident in surgery and a member of the 1981 charter class at the School of Medicine, has been awarded a Culpeper Fellowship for \$25,000 from the Charles E. Culpeper Foundation, Inc.

Dr. Steven H. Grossman and Dr. Robert C. Turner,

assistant professors of medicine, received a \$52,407 grant from Ayerst Laboratories to study the evaluation of AI-27,303 (Cetamolol) and the effects on renal function in mild to moderate hypertensive patients.

Dr. James P. Gutai, associate professor of pediatrics, received a \$20,159 grant from the University of Pittsburgh to support a study of the "Epidemiology of Hormones and Lipoproteins."

The Department of Family Medicine has received three grants totaling \$453,270 from the Health Resources Administration to support its basic and graduate training programs in family medicine and its residencies in general dentistry.

Dr. Jon B. Tingelstad, chairman of the Department of Pediatrics, received a grant of \$87,980 from the National Institute of Environmental Health Sciences to continue an investigation of pollutant levels in breast milk and formula fed to infants.

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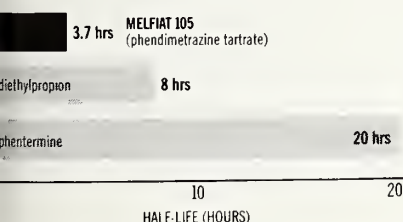


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References: 1. Sheu YS, Ferguson JA, Cooper JR: *Evaluation of the Abuse Liability of Diethylpropion, Phendimetrazine, and Phentermine*, unclassified document ADAMHA, HHS, Office of Medical and Professional Affairs, NIDA, 1980. 2. Douglas JG, Munro JF: The role of drugs in the treatment of obesity, *Drugs* 21:362-373, 1981.

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WARNINGS: Tolerance to the anorectic effect usually develops within a few weeks. When this occurs, the recommended dose should be discontinued. Phendimetrazine tartrate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly.

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USAGE IN CHILDREN: Phendimetrazine tartrate is not recommended for use in children under 12 years of age.

PRECAUTION: Caution is to be exercised in prescribing phendimetrazine tartrate for patients with even mild hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of phendimetrazine tartrate and the concomitant dietary regimen. Phendimetrazine tartrate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose.

ADVERSE REACTIONS: Cardiovascular: Palpitation, tachycardia, elevation of blood pressure.

Central Nervous System: Overstimulation, restlessness, dizziness, insomnia, euphoria, dysphoria, tremor, headache; rarely psychotic episodes at recommended doses.

Gastrointestinal: Dryness of the mouth, unpleasant taste, diarrhea, constipation, other gastrointestinal disturbances.

Allergic: Urticaria.

Endocrine: Impotence, changes in libido.

OVERDOSAGE: Manifestations of acute overdose with phendimetrazine tartrate include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states.

Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Fatal poisoning usually terminates in convulsions and coma. Management of acute phendimetrazine tartrate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Acidification of the urine increases phendimetrazine tartrate excretion. Intravenous phentolamine (Regitine) has been suggested for possible acute, severe hypertension, if this complicates phendimetrazine tartrate overdose.

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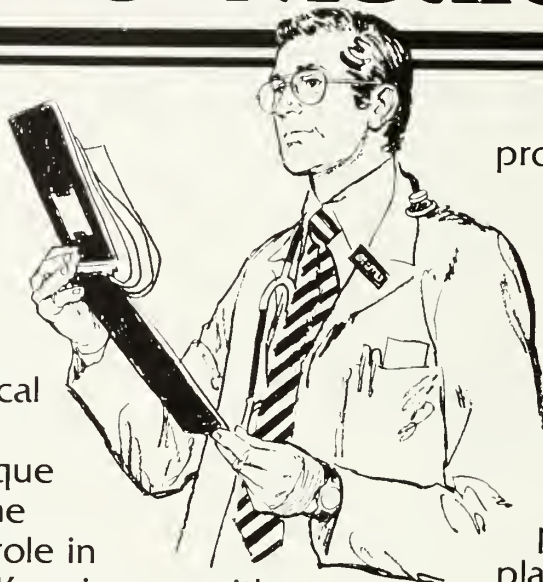
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North Carolina Medical Society PRESIDENT'S NEWSLETTER

NO. 7

DECEMBER 1982

The Christmas season has arrived, and I want to wish each of you a Merry Christmas and a Happy New Year! So far in my term, I've written a great deal about the challenges, difficulties, and outright dangers facing medicine in our country. This strikes me as an appropriate time to note that our profession is greatly blessed. We have superb tools with which to work, and we have great freedom to use them in the ways that good sense and good conscience dictate. That's a full Christmas stocking all by itself!

While I'm on the subject of blessings, let me make a plug for your North Carolina Medical Society. Society dues notices have been mailed to all of our members, and I feel a need to remind you of what you're getting for your money.

Though there have always been honest disagreements about specific budget items, it would be absurd to dispute the overall value and effectiveness of the Society's activities. Make no mistake; if the Society did not exist, we'd be obliged to invent it.

The Society gives us a means to share important scientific and socio-economic information with our colleagues. The Society gives us a means to educate the public on important health issues. The Society gives us a means to influence vital health legislation that is constantly brewing in Raleigh and Washington. The Society gives us a means to bring some order and coherence to what might otherwise be a medical Tower of Babel.

I'll concede that the Society could be more effective and more efficient, but that is true of all organizations. I'll also concede that all of the Society's actions won't please each and every member, but that too is a universal problem. The bottom line is that the Society generally does a fine job of serving you and the public. Your dues, substantial though they may be, are a modest contribution to the fulfillment of so many important objectives.

Speaking of objectives, I am pleased that your Society commented on Section 108 of the Tax Equity and Fiscal Responsibility Act of 1982, which grants wide discretionary authority to the Secretary of the Department of Health and Human Services to revise the Medicare reimbursement guidelines for institution-based physicians. On October 1, 1982, these proposed rules were published in the Federal Register with a thirty-day period for comments.

The Society was asked to seek an extension of this comment period to ninety days so that a comprehensive examination of these rules could be made. We were also asked to prepare comment on these guidelines for submission to the Health Care Financing Administration on behalf of several of our specialty societies. We responded to both of these requests.

The comment period was extended to 45 days, and our reactions were sent to the Health Care Financing Administration. A copy of this response was also sent to the Secretary of the Department of Health and Human Services, the chairmen of the

affected specialty sections, Society officers, and the President of the North Carolina Society of Anesthesiologists. I appreciate the assistance provided by the various specialty groups, and I am pleased that the Society could respond on behalf of our physicians. This is a good example of the need for cooperation between specialty groups and your Medical Society.

The American Academy of Ophthalmology did some fine work in Washington recently. The Academy prompted the Department of Health and Human Services to rewrite proposed hospital rules which, if approved, would have defined "physician" to include non-physicians such as optometrists, chiropractors, podiatrists, and dentists. The regulations were in draft form, and had not been published in the Federal Register, when the Academy submitted its comments to David Stockman, Director of the Office of Management and Budget (OMB). The Academy said that "most hospital services are not within the scope of practice of these providers, as defined and regulated by state licensing laws."

My continuing review of the words of the Society's living Past-Presidents brings me this month to George W. Paschal, Jr., M.D., who served as President in 1965-66. That proved to be a very important year for the Society. Among other things, Dr. Paschal reactivated the committee charged with consideration of a headquarters facility.

In his annual address, Dr. Paschal talked about the distribution of medical care, disaster medical care, the blood bank program, and the medical examiner system. He also reminded his audience that a good physician should sympathize with patients as well as treat them:

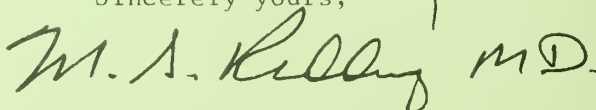
"All surgeons, and other specialists, know that many of the patients seen in consultation have symptoms emanating from a serious emotional problem. When the doctor is a sympathetic listener, the patient himself frequently provides the answer to his disturbance and directs the course of management. This does require time. Doctors must, in spite of the pressures of their everyday activity, let the patient talk; for more often than not he will tell what his trouble is.

The great burden falls upon those in general practice and internal medicine. A Georgetown University professor of psychiatry has said that a suicidal patient often 'cries for help' to his doctor by complaining of physical symptoms with no basis in reality. When a patient makes such complaints, it is important to look for the emotional problem that is responsible. Ideas of worthlessness and hopelessness can be elicited only in a careful interview, and then appropriate treatment can be given or secured. This may well avert suicidal tendencies or save the patient and state from many expensive and unproductive days. Each owner of the privilege of being a doctor of medicine must assume his responsibility in the overall care for the betterment of mental health among the people we serve."

As we struggle with our busy holiday schedules, it's important that we remember Dr. Paschal's urging that we make sympathy a part of every protocol. Science is not a substitute for compassion in good medical practice.

I wish all of you a safe and joyous holiday season.

Sincerely yours,

A handwritten signature in dark ink, reading "M. S. Redding M.D." in a cursive style.

Marshall S. Redding, M.D.
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Assessing the Quality of Dental Care In Your Community

Houck M. Medford, D.D.S., and David W. Strevel, Ph.D.

ABSTRACT The family physician needs to identify good dental practices in his community, as he is frequently asked to recommend a dentist to his patients. The physician's assessment should be based on the dentist's training, the organization, procedures, and methods of his practice, and the prevention and treatment philosophies he follows. General practice residency training will improve the dentist's ability to treat patients with medical complications such as mental retardation, arteriosclerotic diseases, or leukemia. Organization into group practices will generally improve availability and continuity of care and may improve the quality of treatment. The quality of examinations, radiographic techniques, and sterilization can be estimated through a practice visit. Prevention should be emphasized and treatment plans guided by the needs and characteristics of the patient.

THE practice of dentistry and the practice of family medicine are similar because both are concerned with primary care. Periodic examinations, preventive treatments, patient education, and treatment of common acute and chronic conditions are the mainstays of practice in both disciplines.

The primary dental diseases (caries and periodontal disease) affect virtually the entire population and are chronic in nature. The family physician undoubtedly has a concern for identifying good dental practitioners in his community in order to recommend them to his patients and to meet the needs of his own family. We suggest here some points to use in identifying a good dental practice and a well-trained dental practitioner. Since 90% of all dentists practice as generalists, the discussion here will focus on the training and the practice of the general dentist.

TRAINING OF DENTISTS

Fifty-nine dental schools now operate in the United States, graduat-

ing some 5,000 students per year after four years of training. The first two years are spent in a basic science curriculum very similar to medical school. During the third and fourth years, the student spends an increasing amount of time giving clinical treatment under faculty supervision. The goal of this training is to prepare the students for general practice upon graduation.

All states require an examination for licensure to practice. This examination includes written and clinical components. On the clinical portion, the examinee must perform specified treatments on actual patients and complete certain laboratory exercises. For example, in North Carolina this includes performing extractions, fillings, periodontal treatment, and certain operations in denture fitting and construction.

Some states accept licenses granted by other states and others are parties to regional examination procedures. Unlike medicine, no formal training beyond dental school is required as a prerequisite for licensure. Continuing education is not now required to retain a license, although some states monitor and record continuing education credits. Some group associations do require

continuing education; for example, the Academy of General Dentistry requires a minimum average of 25 hours of continuing education per year.

Residency training in general dentistry has increased greatly in recent years. These programs accept new graduates from dental schools and give them an additional one or two years of training while providing a stipend for support. Program emphasis is on increasing skill levels in all aspects of general dental practice and in the management of medically compromised patients. In most programs, this is accomplished in a hospital environment. Some 300 programs now accept about one-sixth of each year's newly graduated dentists into general practice residency training, usually at dental schools or dental departments of hospitals.

The dental resident usually spends four to eight months rotating through emergency medicine, anesthesia, otolaryngology, radiology, and medicine, with the same responsibilities as a medical resident. Although all general dentists have been exposed to basic medical information, the graduate of a hospital-based general practice residency will be more experienced in working with physicians in managing medically compromised or

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Reprint requests to Dr. Medford

physically handicapped patients and may be better able to meet the needs of these patients than someone without this training. Some military programs may also offer training equivalent to a general practice residency.

GROUP VS. SOLO PRACTICE

Although dental practice in the United States has characteristically been solo, the trend is toward group practice. Small groups with two to six practitioners can be found in most cities today. Very large groups with 15 to 50 dentists can be found in some areas. These large groups will usually have most specialists in-house (orthodontists, endodontists, periodontists, oral surgeons, and prosthodontists).

Patients of group practices may enjoy several advantages. A frequent feature is guaranteed 24-hour coverage. Although solo practitioners may work with other solo practitioners to provide this, the group-practice dentist always has access to the patient's medical and dental history, is usually well-known to the patient, and will see the patient at the familiar offices of the group. The standardized record-keeping and business procedures of the group make it easier for one doctor to stand in for another during an emergency or if one doctor should leave the practice.

In some group practices a quality assurance committee composed of doctors reviews all issues related to quality of care. Ideally, group practice dentists operate in a collegial atmosphere where they learn from each other and review each other's work.

WHAT TO LOOK FOR

A visit to a dental practice, whether as a patient or not, should provide a good impression as to the quality of care patients receive. The initial examination of a patient should include a medical and dental history, complete charting of the dentition, probing along the roots of the teeth to check the extent of periodontal disease, and examination of the soft tissues of the head and neck by visual inspection and palpation. The dentist should ask about the functioning of the temporomandibular

joint and palpate the muscles near the joint. He should inspect the surfaces of the tongue and the oropharyngeal tissues for lesions. This examination should be performed at least every two years.

The initial examination of a patient should be supplemented by a complete dental series of intraoral radiographs (up to 19 individual films). The resultant composite of radiographs will show all of the teeth and the supporting alveolar bone. A panoramic radiograph supplemented with intraoral "bitewing" exposures may in some offices be substituted for the complete intraoral series. As a practice standard, this complete series of films should be obtained about every five years with intraoral "bitewing" films taken perhaps every one to two years in the molar areas where caries are most likely to occur.

Lead aprons should protect all patients during x-ray exposure. Staff members should be wearing radiation badges for their personal safety.

Practitioners concerned about long life for amalgam and composite resin filling materials will probably isolate a tooth under treatment with a rubber dam to prevent moisture contamination of the filling materials during the filling process.

Syringes used to inject local anesthetics should be of the aspirating type so that injections directly into the vascular system can be avoided. Disposable needles should be the standard. Sterilization of all instruments by steam or gas should obviously be accomplished.

PREVENTIVE PHILOSOPHY

The benefits of prevention are probably better demonstrated in dental care than in any other area of medicine. Some measures such as water fluoridation require community action; others are only possible through patient education and patient compliance day after day. The dentist should be enthusiastic about water fluoridation, which reduced caries by 60% to 70% when available from birth. The main goal of his practice should be to help his patients maintain good dental health for a lifetime. Since this is so dependent on patient knowledge and co-

operation, the practice will need appropriate motivational and educational tools to accomplish this.

TREATMENT PHILOSOPHY

Dental care differs substantially from most medical care in that a given condition may be treated in several different ways. For example, a severely decayed tooth may be extracted with no prosthetic replacement (cost \$20); it may be treated by root canal therapy and restored with a porcelain-on-gold crown (cost \$500); or the extracted tooth might be replaced with a three-unit cemented prosthesis (cost \$800).

Viewed over a lifetime, dental histories can be categorized into three patterns. The first is marked by diligent personal preventive efforts with professional assistance in hygiene and treatment as needed. This pattern will probably find the patient in his 80s with most teeth still present and functioning. The lifetime expenses for professional treatment will be modest.

The second pattern is characterized by neglect of personal care with professional interventions only for extractions or emergency treatment. The lifetime expense of this pattern is also modest, but the patient will probably be using full dentures by the time he is 40.

The third pattern begins with neglect that lets caries and periodontal disease work many irreversible changes in the mouth, followed by heavy doses of professional intervention to fend off further disease and repair the ravages which have already occurred. This pattern will probably involve multiple root canal treatments, crowns, bridges, partial dentures, and periodontal treatment. Lifetime expense will be very high compared to the other two patterns.

The advisability of crowning teeth, placing bridges, performing root canal treatments instead of extractions, and so on, depends to a great extent on a patient's current oral hygiene habits and dental IQ; that is, the probable extent to which he will carry on with both personal and professional "preventive maintenance" in the future. Poor personal hygiene will cause early failure of crowns and bridges and allow

further progress of periodontal bone loss with subsequent loss of teeth. This makes extensive prosthetic or restorative treatment ill-advised in some patients. The ability to pay for various treatments is also a major consideration for the dentist and patient as they decide on the treatment plan. The long-term good of the patient should be kept para-

mount.

Patients usually arrive at a practice with dental attitudes and habits firmly set, and they always arrive with oral conditions which will place lifetime bounds on treatment possibility and advisability. Ideally, the dentist will adjust his advice and his professional services accordingly. Treatment alternatives, cost impli-

cations and their required commitment to home care (if any) should be frankly discussed with patients before treatment is begun. Patients who have been uncaring about dentistry in the past need a dentist who has the tolerance and skill necessary to accept them and move them to more progressive attitudes to the extent possible.

MAURICE RICHARDSON [1851-1912]

The surgeon reviewing his active years of practice cannot but be impressed by the responsibilities of his profession. He recalls the frequent misgivings with which, on the strength of his fallible opinion, he has advised and performed operations; the excitement of a critical operation and the deep breath of thankfulness when he has succeeded in averting some grave complication; his forebodings become realities; the too often useless struggle against overwhelming odds; the distressful death; the severe self-criticism and biting regrets. And its not the surgeon, appreciating his own unfitness in spite of years of devotion, in the position to condemn those who lightly take up such burdens without preparation and too often without conscience?

Journal of the American Medical Association 61:161, 1913

The Hooper Memorial Lecture: The Role of Parenteral Nutrition In the Management of Patients With Injury

George F. Sheldon, M.D.

INTRODUCTION

Dr. Newell, Dr. Busse, Dr. Sabiston: It is a pleasure to participate in Duke University Medical Center's Symposium on Trauma in conjunction with the Annual Meeting of the North Carolina State Medical Society. I am flattered to present the Joseph W. Hooper, Sr., Memorial Lecture as part of this important program. As Dr. Busse has indicated, the Department of Surgery at Duke University Medical Center, under the leadership of Dr. David C. Sabiston, Jr., the James B. Duke Professor and chairman of the Department of Surgery, is regarded as one of the outstanding graduate and undergraduate training programs in the country. Dr. Sabiston has held the office of president of the American College of Surgeons and the American Surgical Association, and has been involved in a leadership role in virtually all of academic surgery.

Dr. Joseph W. Hooper, Jr., has kindly provided me with some background on his father which I think is worth sharing with you. Dr. Hooper was born in Baltimore, Maryland, in 1887, and was graduated from the University of Maryland School of Medicine, second in his class of 1909. After three years as surgical assistant to Dr. Spruill, professor of surgery at Maryland, Dr. Hooper came to Wilmington as superintendent of the James Walker Memorial Hospital. Two years later, he began private practice with the late Dr. Burbank.

During World War I, he served in France, returning to the United States in 1919 with the rank of captain, after having been chief of surgery at Base Hospital No. 53 in Longue, France. Resuming the practice of surgery here, he remained until his death, having served as chief of surgery at James Walker Memorial Hospital and Babies Hospital on Wrightsville Sound. At the time of his death, he was senior surgeon at those institutions. Dr. Hooper was particularly interested in pediatric surgery, and maintained standards in surgery in Southeastern North Carolina as to technique, principle, and diagnosis compatible to any in the country.

During World War II, he was medical director of North Carolina Shipbuilding Company, and was active in later years in business and civic affairs of the community.

Dr. Hooper died of cancer in 1952, and operated the day before he was admitted to the hospital as a patient himself. He is best described as the headstone in Oakdale Cemetery reads: "He went about doing good."



George F. Sheldon, M.D.

IN 1978, the cost of trauma, including medical expenses, wage loss, and property damage was \$68.7

billion. Trauma accounts for one-third of all hospital admissions which approaches two million hospital admissions annually. Injury is currently the commonest cause of death in the United States in the age group one to 38 years.

In a white paper published in 1966

by the National Academy of Science-National Research Council entitled "Accidental Death and Disability: The Neglected Disease of Modern Society," it was observed that trauma was a "health problem second only to the ravages of ancient plagues or world wars." In a

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Presented at the 128th Annual Session of the N.C. Medical Society May 8, 1982, Pinehurst, N.C.

follow-up document by the National Academy of Medicine-National Research Council, it was noted that systems of transportation, emergency medical technician training, and other pre-hospital aspects of health care which had been found deficient in the 1966 paper, had improved. The more recent white paper of 1978 observed that one of the frontiers which offers the potential for improvement of the care of the patient with injury, is in the improvement of the response times and critical care facilities of our hospitals.

Although transportation, resuscitation, and critical care facilities, coupled with skilled surgery, will determine the outcome in most patients with injury, the complications of injury usually require the availability of skilled nutritional support in order to positively affect the ultimate outcome.

METABOLIC RESPONSE TO INJURY

Because the trauma victim is frequently young and healthy, body composition can be viewed in an idealized fashion (Fig. 1). The hormonal environment initiated by activation of the sympatho-adrenal axis results in elevation of catecholamines, glucocorticoids, glucagon, and other "stress hormones" which

inhibit the effectiveness of insulin and counteract its anabolic effect. The hormonal environment following injury results in gluconeogenesis, glycogenolysis and lipolysis. The result of this redistribution of body structure into energy is an expansion of the glucose base, elevation of free fatty acids, and an increased turnover in urea. The Basal Energy Expenditure (BEE) is influenced by the severity of injury, the degree of hydration, circulatory homeostasis, and pain.

Initial therapy does not involve provision of nutrient substrate, but involves resuscitation with crystalloid and blood, protection of the airway, expeditious operation, stabili-

zation of fractures, and prevention of hypoxemia (Fig. 2). During the *acute phase of injury*, resuscitation is the priority, and attempts to override the metabolic response to injury are discouraged. When the patient becomes hemodynamically stable and the hormonal alterations associated with injury begin to abate, starvation adaptation occurs, which allows skilled nutritional support to be effective. Starvation adaptation is associated with a lowering of stress hormone levels and diuresis. The transition from the acute to the adaptive phase following injury is characterized by fat becoming the major energy substrate. Uncomplicated injury, even

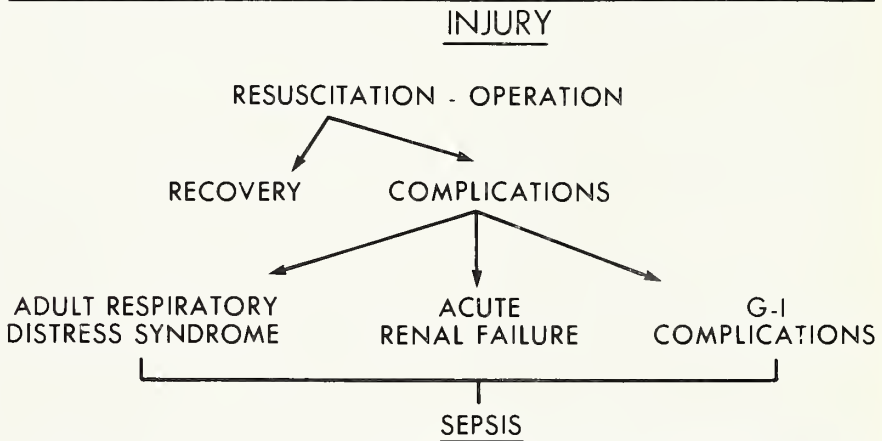


Figure 2. Algorithm for use of nutritional support after injury is shown. Nutritional support is broadly employed to minimize loss of body cell mass and avoid sepsis. If specific complications occur, alterations in approach and solutions are required.

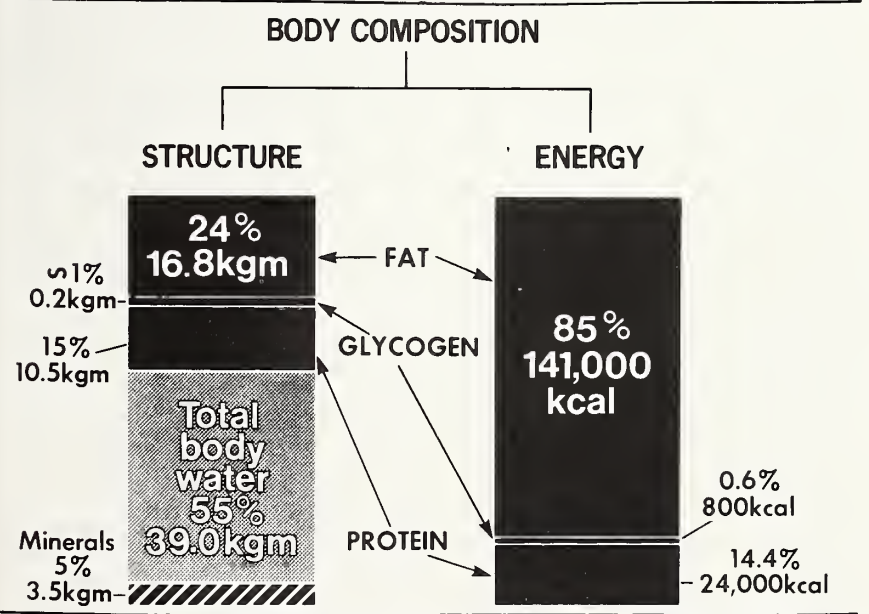


Figure 1. Body composition may be viewed as structure that has the potential for conversion to energy. The traumatized patient, during the acute phase, has an expanded glucose space, and converts protein into glucose. As starvation adaptation occurs, the largest potential source of energy, fat, becomes the primary source.

if major, results in very minimal elevation of basal metabolic expenditure. Protracted, severe injuries, such as a major third degree burn, cause a prolonged increase in resting metabolic expenditure, which can approximate twice the normal values. In patients with greater than 30% thermal burn, a daily nitrogen excretion rate of as much as 20 g to 40 g, reflecting protein degradation, may occur.

NUTRITIONAL ASSESSMENT

The commonly used static nutritional assessment methods consist of height and weight compared to normal tables, anthropometric measurements to assess the fat layer and lean body mass, and biochemical tests of protein intermediates. The most useful biochemical test is serum albumin determination, although measurement of transferrin,

retinal-binding protein, or others is preferred by some investigators. Most protein determinations, be it albumin or those of shorter half-life, reflect the body protein turnover. All are subject to rapid diminution in the catabolic patient, and may be abnormal if protein metabolism is abnormal, as in liver failure. If the patient has a history of nutritional deprivation, albumin, transferrin and other values accurately reflect undernutrition.

The most important evaluation is the physician's judgment of the magnitude and potential duration of the injury. Measurement of basal energy expenditure (BEE) and quantitation of nitrogen balance will aid in this determination. A clinical axiom which has been useful in planning nutritional support is the "five day rule," which stresses that (1) within five days, a nutritional inventory should be performed, and (2) if it is predicted that the patient will be unable to eat one week after the inventory, therapeutic nutritional support should be initiated.

When the decision has been made that therapeutic nutrition is needed, planning proceeds by assuming Basal Energy needs of 25 kilo-calories per kilogram per day. Increased energy needs occur in patients with injury, and will vary from an additional five to 60 kcal/day. Burn victims will require 40 kcal/kg/day, per the percent of third degree burn. Protein estimates range from 1 g to 3 g protein/kg/day, or 400 to 500 mg amino acid nitrogen/kg/day (Table I). Having made these assessments, nitrogen balance is assessed in order to quantitate the efficacy of the therapy with the goal of obtaining positive protein balance. If a need for therapeutic nutrition is anticipated, a patient can be provided with a feeding tube jejunostomy at the time of operation.

Table I
Nutrient Estimates in Injury

Energy	
Basal	25 kcal/kg/day
Injury	5-60 kcal/kg/day
Burns	40 kcal/kg/day/third degree burn
Protein	
1-3 gm protein/kg/day	
400-500 mg amino acid nitrogen/kg/day	

The *intermediate phase of injury*, usually 24 to 96 hours after admission, is a period when the therapeutic priority is cardiopulmonary resuscitation. During that phase, measurements of nitrogen excretion are performed, body functions are monitored, pulmonary and renal function assessed, to determine the response to the injury. Correlation of urine sodium, urea, potassium, and creatinine levels with blood values may make possible the early diagnosis of acute renal failure and the infusion of hypertonic dextrose (47% dextrose) with less than 1% amino acids to control serum potassium and blood urea nitrogen in renal failure. Moreover, it allows for fairly high calorie feeding at relatively low volumes of fluid infusion. Although an occasional patient with renal failure can be managed solely by hypertonic glucose and low amino acid infusion, most will require hemodialysis. When hemodialysis is employed, the concentration of sugar is diminished to the more standard glucose base of 25%, and given with a higher protein content: approximately 4% amino acid. An additional reason for changing from a low concentration amino acid or solution of essential amino acid is that patients in renal failure may develop histidine deficiency if on a prolonged period of essential amino acids. When, however, dialysis becomes necessary, standard combinations of amino acids can be given. During the adaptive phase after injury (14 to 21 days) many patients can assume normal alimentation and activity. If they are unable to resume oral feeding, intravenous therapy is modified by lowering the concentration of dextrose to 25% or even 15%, while maintaining the amino acid concentration of 4%, designed to place the patient in positive protein balance. Because energy and protein requirements are frequently less in this adaptive period than earlier, nitrogen balance is monitored. Most patients during this phase require intravenous fat emulsions, available as 10% safflower or soybean infusions, two to three times a week in order to prevent fatty acid deficiency. An underemphasized, but extremely impor-

tant, component of therapy at this juncture is exercise, which is best done in collaboration with the physical therapy department. In fact, many patients can work in isometric, weight-lifting and treadmill routines during this period of time.

During the *chronic phase* of recovery, the nutritional program is modified. A dietitian can monitor food intake and provide counseling. If the patient is unable to eat because of anatomic or functional loss of gastrointestinal integrity, nutrients will be administered through a tunneled silastic catheter (Broviac or Hickman), and the patient is trained in home hyperalimentation.

An axiom of therapeutic nutrition is that the gastrointestinal tract should be used if it retains anatomic and functional integrity. Frequently, ileus, primarily confined to the stomach and colon, will delay enteral feeding for several days. Patients with relatively normal body composition before injury will not be adversely affected without calories and protein for several days. Patients with many major injuries, such as long bone fractures, can have effective nutritional care administered by a skilled dietitian. If metabolic demands are high, and oral intake insufficient, supplemental meals, food supplements, and continuous infusion of feeding solutions through silastic mercury-tipped naso-enteric tubes are recommended. A combination of tube, oral and intravenous feeding in severe catabolic illness is more effective than any single method. During burn resuscitation in which 2 ml/kg body weight per percent burn is used for calculating fluid needs for resuscitation, 5% dextrose-Ringer's lactate can be used with 4.25% amino acid solution. If a 10 liter fluid volume is required, approximately 2000 calories plus sufficient protein will be provided. In our institution, the nutritional support service for the hospital is provided by the Trauma Service, and with the aid of a nutritional support nurse, places catheters and monitors patient care during treatment.

COMPLICATIONS FOLLOWING INJURY

Because the injured victim is

usually young and healthy, therapeutic nutrition is designed primarily to treat complications. After injury, acute respiratory failure often occurs somewhat later than renal failure. The physiologic characteristics of the acute respiratory distress syndrome (ARDS) are (1) PaO_2 less than 60 mm Hg; (2) PaO_2 greater than 49 mm Hg; (3) decreased lung volume; and (4) capillary leak. If a fractional inspired oxygen concentration (FIO_2) of greater than 50% is required for more than one week, the mortality rate is 70%. If ARDS is associated with another system failure, such as liver or kidney, renal, or with sepsis, the mortality rate exceeds 90%. Because most patients survive the early phase of acute respiratory failure, nutritional supplementation to maintain respiratory muscles and protein-dependent enzyme systems is an essential feature of their care. If patients have required a tracheostomy, a silastic tunneled catheter is usually placed early in the course of treatment to avoid infection, which commonly occurs with subclavian catheters in close proximity to a tracheostomy wound. It is our practice to attempt to wean the patient from ventilatory support as soon as possible. If, however, the patient does not meet criteria for extubation, the period of weaning serves as exercise for the ventilatory muscles, an absolute necessity along with substrate provision if atrophy and weakness of intercostal muscles are to be avoided.

A critical period in the management of a trauma patient occurs as weaning from mechanical ventilation is attempted. Recent work by Kinney, Elwyn, and Wolff shows that high carbohydrate infusions frequently increase the respiratory quotient (RQ) above 1, indicating the deposition of fat, and increased CO_2 production. If a high dextrose concentration solution is administered, the patient may therefore become hypercapnic because of glucose metabolism rather than mechanical impairment ventilation. Thus, it is sometimes desirable to minimize or discontinue altogether the infusion of nutrients while extubation is in process, although this complication is probably important in a very

few patients who may have significant alteration of pulmonary parenchymal function.

HEPATIC FAILURE

The cause of hepatic failure after injury is unclear. Probably, a period of diminished blood flow attendant on shock results in hepatocellular damage. Hepatic failure is associated with abnormal liver function tests, which include elevation of bilirubin, alkaline phosphatase, and isoenzymes. No tests of hepatic function are specifically diagnostic, and post-injury liver failure is usually a diagnosis of exclusion. If total parenteral nutrition (TPN) has been administered, and if excess carbohydrate calories have been provided, hepatic steatosis, which can contribute to or cause liver failure, will occur. Hepatic steatosis seems to be associated with intravenous feeding of solutions containing excess quantities of intravenous glucose which are administered for prolonged periods of time. Essential fatty acid deficiency and toxicity from amino acid solutions have also been suggested. In patients with hepatic failure following injury, nitrogen balance should be maintained without administration of excessive carbohydrate.

GALLBLADDER COMPLICATIONS

Patients receiving intravenous feeding probably develop an increased incidence of gallstones. The patient in the Intensive Care Unit requiring metabolic support, mechanical ventilation, and intravenous feeding, frequently develops an enlarged gallbladder, and is prone to develop acalculous cholecystitis which should be suspected in patients with fever and abdominal pain who have received hyperalimentation for two to three weeks. Bile crystals, and salts which periodically form and dissolve in such gallbladders, probably also contribute to its development. It is possible that lipid, provided in a nasogastric tube, will produce gallbladder contractions and cholestasis, which could lessen the likelihood of acalculous cholecystitis.

Gastrointestinal fistulas are a com-

mon complication of intra-abdominal injury and should be considered part of the multiple organ system failure syndrome. They usually become apparent within a week after injury and are more common in penetrating injuries than blunt trauma. Considerable progress has occurred in their management, with mortality falling from 62% in 1960, to between 6% and 20% in 1975. Total parenteral nutrition serves as a replacement for oral intake in G-I fistulas, approximately 40% of which will heal without surgery, after 30 to 40 days of intravenous feeding. Mortality rate and fistula closure are adversely affected by infection. If a fistula does not close within one month from the time that infection is controlled, surgery is usually required. Obstruction, foreign body, a tract less than 2 cm from the skin, or an unfavorable underlying disease such as enteritis can contribute to the failure of closure on intravenous feeding.

Infection control is the therapeutic frontier in the management of trauma patients. The multiple organ system failure syndrome is probably a manifestation of underlying infection so that maintenance of sufficient substrate to prevent deterioration of the immune system is essential.

At present, it is difficult to identify patients who are at risk for infection after injury. Meakins, and others, however, have shown that skin test anergy to recall antigens correlates with age, the magnitude of injury, and survival. Undoubtedly, nutrition is not the only component of the complex reaction to injury which is detrimental to ultimate survival.

However, it is rational to assume that maintenance of nutrition will prevent or possibly correct immune deficiency following injury, because protein calorie malnutrition (PCM) is associated with a decreased effectiveness of epithelial barriers necessary for local host defense resistance. In addition, bactericidal and fungicidal functions of polymorphonuclear leukocytes are adversely affected by malnutrition in spite of the preservation of chemotactic and phagocytic actions of white blood cells. Immunoglobulin A (IgA) pro-

duction is also diminished in undernourished patients.

The leukocyte subpopulations (A, B, and T cells) also diminish during malnutrition or injury. The T cell and its various sub-groups of suppressor cells and helper T cells are part of the metabolic response to injury.

A rational approach to the management of patients with injury can be provided by addressing the metabolic needs of the traumatized patient at different stages:

A. Acute Phase (24 hours)

1. Resuscitate with crystalloid and blood.
2. Transfuse to a hematocrit of 30 mg/dl.
3. Monitor hemodynamics.
4. Measure nitrogen excretion.
5. Do not attempt to override the metabolic response to injury.

B. Intermediate Phase (24 to 96 hours)

1. Maintain cardiopulmonary function.
2. Measure nitrogen excretion.
3. If renal failure is present, use a 47:1 mixture of dextrose to amino acid intravenously.
4. Initiate tube feeding.

C. Adaptive Phase (14 to 21 days)

1. Use a 20% dextrose:4% amino acid mixture.
2. Institute tube feeding if feasible, or in addition to intravenous support.
3. Quantitate therapy with nitrogen balance daily.
4. Administer fat (2% to 4% daily calorie requirement) intravenously or orally.
5. Physical therapy.

D. Chronic Phase (months)

1. Tube or jejunostomy feeding is preferred.
2. Use a long-term tunneled silastic catheter if intravenous feeding is required.
3. Reduce dextrose concentration of nutrients.
4. Assess nitrogen balance twice a week.
5. Exercise and self-care.

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Acute Care Hospitals: Their Future and the Physicians' Role

C. Willard Camalier III

This is the third in a series on socioeconomic issues which impact on organized medicine. The "Journal" offers these articles as a forum for debate and encourages comment from you the reader via letters and editorials.

—A.A.H.

The acute care hospital evolved from a warehouse for the dying to an environment where the ill are treated. Since that shift in emphasis, little has changed in its concept of delivering health care. The marked changes in medical treatment resulted from the introduction of advanced technology into the diagnosis and treatment of disease. Better trained physicians and other health personnel have also made a great contribution to this improvement in the delivery of acute medical care. Immediately following World War II, the Hill-Burton Act made low cost federal loans available for renovating old hospitals and for new construction, which created an expansion of the acute bed capacity. This was in direct response to the post war "baby boom" and the need to treat a number of illnesses which are no longer of major significance to our population. In the last decade we have had a rapidly declining occupancy of pediatric beds with some hospitals converting such beds to other uses. There has also been a marked increase in the number of our population sixty-five years of age and older, many of whom suffer from chronic diseases. The question is

whether the acute hospital, as we know it, is responsive to the needs of our present population. Most observers in the health area would suggest the evidence is to the contrary.

We, as a society, are at a crossroads in defining the future direction and policy of our health delivery system and its financing. In addressing the questions regarding what changes are necessary and appropriate in order to maintain a high quality of medical care at an acceptable cost, the hospital has become a focal point. It has become apparent that the most effective means of reducing unnecessary health costs is to keeping patients out of the hospital whenever possible. In our current system, the hospital is expensive and exists for the purpose of providing acute medical care where no other appropriate option is available. It does not exist for the provision of primary care or the treatment of chronic illness.

One problem we face in changing utilization patterns is that our system revolves around the acute care model. This is the environment in which physicians and other health providers are trained and to which they become acclimated early in their careers. The hospital is a convenient place for treating large numbers of patients in one location with a full spectrum of diagnostic resources readily available. A second major (and many feel a primary) contributor to the use of the hospital for non-acute medical care is the reimbursement structure of the

third party payors. Since its inception, the health insurance industry has provided coverage for inpatient services that far exceed the coverage provision for ambulatory care. This provides a fiscal incentive for patients and physicians to use inpatient facilities although treatment can often be adequately provided through other means. It has become "cheaper" for the patient to be admitted to the hospital despite its higher cost. The insurance industry is now looking at front end deductibles and reimbursement differentials between outpatient and inpatient care for creating disincentives to the unnecessary use of high cost treatment sites.

Medicare and Medicaid have reduced their institutional reimbursement levels to a point at which hospitals cannot recoup the expense of providing care to the publicly insured patients. This has precipitated what is termed "cost-shifting" whereby the unrecovered costs are passed to the privately insured and self-pay patients. Other shifts which emphasize the need for changes in the use of acute care hospitals and which stand in competition with the hospital are free-standing ambulatory surgical centers, emergency centers, diagnostic clinics, health maintenance organizations, and an increase in the use of the physician's office for primary care. A number of corporations are providing preventive medical care for their employees using multiphasic screening, psychological counseling, and in-house smoking

cessation and weight reduction programs in an attempt to control their health costs. All of these forces are currently impacting the hospital industry and can only be expected to increase. It should be apparent that hospitals will have to adjust if they are to survive. The medical community will play a pivotal role in this evolution.

What needs to be done is to identify those options which are available to provide supplemental revenues to the hospitals in the future. One option is the use of the hospital as a health resource for the community. The hospital can be the primary location for health education in such areas as cancer, cardiovascular disease, nutritional counseling, hypertension, pre- and post-natal care, and diabetes. It could also be used to educate the public on how to use their physicians and the

available health services in a more cost effective manner as well as the need for the patient to become a partner in his or her own health care. The hospitals might also seek to convert unused beds to ambulatory, skilled, or intermediate care uses where appropriate for the community. Such a conversion on a permanent or "swing bed" basis would require changes in existing regulations and reimbursement mechanisms, but it needs to be actively pursued in view of our current and future population changes. These and other approaches need to be explored if the community hospital is to survive and continue to provide the secondary care necessary for the continuation of quality medical care delivery. Tertiary care centers are not as vulnerable and may undergo less drastic change in the near future.

community hospitals to assume such innovative roles will be the physicians. Both physicians and patients will continue to require acute care services at the community level. There must always be a place for major surgical procedures and for the treatment of major illness; this is the appropriate role of the acute care hospital, and one which must be maintained to serve our population appropriately. The hospital is integral to a physician's practice of medicine, and it is the physician's expertise in the delivery of health care that will be essential as new opportunities are identified at the community level. The physician can recognize these opportunities and help the hospital's Board of Trustees, administrators, and the community in maintaining the hospital as a viable provider of quality health care.

Sexually Transmitted Diseases: Treatment Guidelines-Part I

These guidelines for treatment of sexually transmitted diseases (STD) were established after careful deliberation by a group of experts and staff of the Centers for Disease Control (CDC). Commentary received after dissemination of preliminary documents to a large group of physicians was also considered. Certain aspects of these guidelines represent the best judgment of experts. The guidelines should not be construed as rules, but rather as a source of guidance within the United States. This is particularly true for topics that are controversial or based on limited data.

CHLAMYDIA TRACHOMATIS INFECTIONS

Infections caused by *Chlamydia trachomatis* are the most prevalent sexually transmitted diseases in the United States today. The importance of serious complications related to chlamydial infections has been established. Diagnosis and treatment of these infections are frequently based on the clinical syndrome since chlamydial cultures often are unavailable. The following guidelines are for culture-proven infections caused by non-lymphogranuloma venereum (LGV) strains of *C. trachomatis*. For approaches to the treatment of common chlamydial infections when cultures are not available, see Common STD-Associated Syndromes.

Uncomplicated Urethral, Endocervical, or Rectal Infection in Adults Drug Regimens of Choice

Tetracycline hydrochloride (HCl): 500 mg, by mouth, 4 times a day for at least 7 days

OR

Doxycycline: 100 mg, by mouth, twice a day for at least 7 days

Alternative Regimens

(for patients in whom tetracyclines are contraindicated or not tolerated)

Erythromycin: 500 mg, by mouth, 4 times a day for at least 7 days

Sulfonamides are also active against *C. trachomatis*, but have not been extensively studied.

Management of Sexual Partners

All persons exposed to *C. trachomatis* infection should be examined for STD and promptly treated for exposure to *C. trachomatis* with one of the above regimens.

Follow-up

Posttreatment cultures are advisable. Positive cultures may not be detectable until 3-6 weeks after treatment; when they are positive, patients should be treated again with one of the above regimens.

Chlamydial Urogenital Infections During Pregnancy

Treatment should be given to pregnant women who have culture-proven *C. trachomatis* infections or, if cultures are not available, to pregnant women whose sexual partners have nongonococcal urethritis.

The suggested treatment is erythromycin 500 mg, by mouth, 4 times a day on an empty stomach for at least 7 days. For women who cannot tolerate this regimen, a decreased dose of 250 mg, by mouth, 4 times a day should be used for at least 14 days. The optimal dose and

duration of antibiotic therapy for pregnant women have not been established. There are currently no completely acceptable alternative regimens for women who are allergic to erythromycin or cannot tolerate erythromycin. In case of proven treatment failure, the woman should be treated again with erythromycin in either of the dosage schedules outlined above.

Treatment of the male partner(s) with tetracycline at the same time is an important part of the therapeutic regimen.

Chlamydial cultures are expensive and not widely available. Pregnant women at particular risk for chlamydial infections should have cultures taken if possible at their first prenatal visit. Important risk factors include the following: a pregnant woman is unmarried, is less than 20 years old, resides in a socially disadvantaged community (e.g., inner city), has other sexually transmitted diseases, has reported late for prenatal care, has partners with nongonococcal urethritis, has nongonococcal purulent endocervicitis, or has an abacterial urinary tract infection. (See Common STD-Associated Syndromes.)

Established Chlamydial Conjunctivitis of the Newborn

For all cases of ophthalmia neonatorum, appropriate tests should be

This is the first in a series of three articles reprinted from the Centers for Disease Control's "Morbidity and Mortality Weekly Report" (MMWR), August 20, 1982, Vol. 31, No. 25.

done to rule out *Neisseria gonorrhoeae* as the cause.

The diagnosis of chlamydial conjunctivitis can be established by culture or Giemsa-stained conjunctival scrapings. Treatment consists of oral erythromycin syrup 50 mg/kg/day in 4 divided doses for at least 2 weeks. There is no indication that topical therapy provides additional benefit. If inclusion conjunctivitis recurs after therapy, erythromycin treatment should be re-instituted for an additional 1-2 weeks.

Chlamydial Pneumonia of Infancy

For established cases of lower respiratory disease due to *C. trachomatis*, the recommended therapy for infants is oral erythromycin syrup 50 mg/kg/day in 4 divided doses for at least 3 weeks. The optimal duration for therapy has not been established.

GONOCOCCAL INFECTIONS

The following guidelines for the treatment of gonococcal infection in the United States take into account several observations: The increasing incidence of infections due to penicillinase-producing *N. gonorrhoeae* (PPNG), unpublished reports of the emergence of tetracycline-resistant gonococci in several geographic areas, the high frequency of coexisting chlamydial and gonococcal infections, and increased recognition of the serious complications of chlamydial and gonococcal infections. In addition, new antimicrobials, in particular new cephalosporins, that may prove to be effective in treating gonococcal infection are becoming available in the United States. Therefore, these guidelines do not attempt to be a comprehensive list of all possible treatment regimens. Rather, they seek to provide guidance for regimens that meet general criteria of efficacy, safety, ease of administration, and cost.

Uncomplicated Infection in Adults Recommended Regimens

(the order of presentation does not indicate preference)

Tetracycline HCl: 500 mg, by

mouth, 4 times a day for 7 days (total dose 14.0 g). Other tetracyclines are not more effective than tetracycline HCl. All tetracyclines are ineffective as a single-dose therapy. Doxycycline hyclate 100 mg, by mouth, twice a day for 7 days may be substituted for tetracycline.

Advantage

1. Effective against coexisting chlamydial infections

Disadvantages

1. Requires compliance with multiple doses
2. May encourage the emergence of tetracycline-resistant strains if the regimen is not strictly followed
3. Ineffective against anorectal gonococcal infections in men

OR

Amoxicillin/ampicillin: Amoxicillin, 3.0 g, or ampicillin, 3.5 g, either with 1.0 g probenecid by mouth

Advantage

1. Single-dose treatment

Disadvantages

1. Ineffective against chlamydial infections
2. Ineffective against anorectal and pharyngeal gonococcal infections

OR

Aqueous procaine penicillin G: 4.8 million units injected intramuscularly (IM) at 2 sites, with 1.0 g of probenecid by mouth

Advantage

1. Single-dose therapy

Disadvantages

1. Injection
2. Possible procaine reaction
3. Possible penicillin anaphylaxis
4. Ineffective against chlamydial infections

An important concern in the treatment of gonorrhea is coexisting chlamydial infection, which has been documented in up to 45% of gonorrhea patients for whom adequate chlamydial cultures are done. Patient compliance can also be a problem with multiple-day tetracycline/doxycycline regimens for gonococcal infections, as can the potential selection of tetracycline-resistant isolates when incomplete doses are taken. To address these

concerns, a single-dose regimen could be administered just before the tetracycline/doxycycline regimen. On theoretical grounds, this combined regimen (outlined below) is very attractive, but its efficacy and side effects have not been evaluated. CDC intends to undertake such an evaluation and encourages others to do the same.

The combined regimen includes:

Amoxicillin/ampicillin: Amoxicillin 3.0 g or ampicillin 3.5 g, either with 1.0 g probenecid by mouth

PLUS

Tetracycline HCl: 500 mg, by mouth, 4 times a day for 7 days (total dose 14.0 g)

Doxycycline hyclate 100 mg, by mouth, twice a day for 7 days may be substituted for tetracycline HCl.

Advantages

1. Provides adequate single-dose treatment for gonorrhea
2. Effective against chlamydial infections

Disadvantage

1. Efficacy and side effects of this specific combined regimen have not been evaluated.

Special Note:

Tetracycline or aqueous procaine penicillin G (APPG) is the preferred therapy for pharyngeal gonococcal infection. Pharyngeal infection is not effectively treated by either the amoxicillin or ampicillin regimens.

A homosexual man with uncomplicated gonococcal infection should be treated with aqueous procaine penicillin G 4.8 million units, plus 1.0 g of probenecid. If he is allergic to penicillin, use spectinomycin 2.0 g, IM, in 1 injection. Both of these regimens provide adequate treatment for urethral and anorectal gonococcal infection. However, spectinomycin is ineffective in the treatment of pharyngeal gonococcal infection.

Other Considerations

Patients other than homosexual men who are allergic to penicillins or probenecid should be treated with oral tetracycline or doxycycline as above. Penicillin-allergic patients who cannot tolerate tetracyclines may be treated with spectinomycin HCl, 2.0 g, IM, in 1 injection.

Patients with incubating syphilis

(seronegative without clinical signs of syphilis) are likely to be cured by all the above regimens except spectinomycin. All patients treated for gonorrhea should have a serologic test for syphilis.

Patients with gonorrhea who also have syphilis or are established contacts of syphilis patients should be given additional treatment appropriate to the stage of syphilis.

Treatment of Sexual Partners

Men and women exposed to gonorrhea should be examined, cultured, and treated at once with one of the regimens above.

Follow-Up

Follow-up cultures should be obtained from the infected sites 4-7 days after completion of treatment. In addition, cultures should be obtained from the rectum of all women who have been treated for gonorrhea.

Treatment Failures

The patient in whom gonorrhea persists after treatment with one of the non-spectinomycin regimens above should be treated with 2.0 g of spectinomycin IM. (See Penicillinase-Producing *Neisseria gonorrhoeae*.) Recurrent gonococcal infections after treatment with the recommended schedules may be due to reinfection and indicate a need for improved contact tracing and patient education. Since PPNG infection is a cause of treatment failure, posttreatment isolates should be tested for penicillinase production.

Drugs Not Recommended

Although long-acting forms of penicillin (such as benzathine penicillin G) are effective in the treatment of syphilis, they have NO place in the treatment of gonorrhea. Oral penicillin preparations such as penicillin V are not recommended for the treatment of gonococcal infection.

Penicillinase-Producing *Neisseria gonorrhoeae*

Patients with proven PPNG infection or who are likely to have acquired gonorrhea in areas of high PPNG prevalence and their sexual partners should receive spectinomycin 2.0 g, IM, in a single injection.

Tetracycline may be added to treat coexistent chlamydial infection. Patients with positive cultures after spectinomycin therapy should be treated with cefoxitin 2.0 g, IM, in a single injection plus probenecid 1.0 g, by mouth; OR cefotaxime 1.0 g, IM, in a single injection without probenecid. A daily single dose of 9 tablets of trimethoprim/sulfamethoxazole (80 mg/400 mg) for 5 days should be used to treat pharyngeal gonococcal infection due to PPNG. Spectinomycin and cefoxitin are ineffective in pharyngeal infections.

Gonococcal Infections in Pregnancy

All pregnant women should have endocervical cultures for gonococci as an integral part of the prenatal care at the time of the first visit. A second culture late in the third trimester should be obtained from women at high risk of gonococcal infection.

Drug regimens of choice are amoxicillin, or ampicillin, each with probenecid as described above. Women who are allergic to penicillin or probenecid should be treated with spectinomycin 2.0 g, IM. Erythromycin in the dosage recommended under chlamydial infection can be added to treat coexistent chlamydial infection.

Refer to the sections on acute salpingitis and disseminated gonococcal infections for the treatment of these conditions during pregnancy. Tetracycline should not be used in pregnant women because of potential adverse effects on the fetus.

Disseminated Gonococcal Infection

Treatment Schedules

Hospitalization is usually indicated, especially for those who cannot reliably comply with treatment, have uncertain diagnosis, or have purulent joint effusions or other complications.

There are several acceptable treatment schedules for the gonococcal arthritis-dermatitis syndrome. These include the following:

Aqueous crystalline penicillin G: 10 million units, intravenously (IV), per day until improvement

occurs, followed by amoxicillin 500 mg or ampicillin 500 mg, by mouth, 4 times a day to complete at least 7 days of antibiotic treatment.

OR

Amoxicillin/ampicillin: amoxicillin 3.0 g or ampicillin 3.5 g, by mouth, each with probenecid 1.0 g, followed by amoxicillin 500 mg or ampicillin 500 mg, by mouth, 4 times a day for at least 7 days.

OR

Tetracycline HCl: 500 mg, by mouth, 4 times a day for at least 7 days. Tetracycline HCl should not be used for complicated gonococcal infection in pregnant women.

OR

Cefoxitin/cefotaxime: cefoxitin 1.0 g or cefotaxime 500 mg, either given 4 times a day IV for at least 7 days (treatment of choice for disseminated infections caused by PPNG)

OR

Erythromycin: 500 mg, by mouth, 4 times a day for at least 7 days.

Special Considerations

Open drainage of joints other than the hip is not indicated. Intra-articular injection of antibiotics is unnecessary.

Meningitis and Endocarditis

Meningitis and endocarditis caused by the gonococcus require high-dose IV penicillin therapy. Optimal duration of therapy is unknown, but most authorities treat patients for a month. Therapy of penicillin-allergic patients must be individualized.

Gonococcal Ophthalmia in Adults

Adults with gonococcal ophthalmia should be hospitalized and treated with aqueous crystalline penicillin G 10 million units, IV, daily for 5 days. For PPNG, use cefoxitin 1.0 g or cefotaxime 500 mg, IV, 4 times a day. Eyes should be irrigated immediately with saline or buffered ophthalmic solutions and then at least at hourly intervals as long as necessary to eliminate discharge. Cases must have careful ophthalmic follow-up to deal with ocular complications.

Infants Born to Mothers with Gonococcal Infection

The infant born to a mother with gonorrhea is at high risk of infection and requires treatment with a single injection of aqueous crystalline penicillin G: 50,000 units, IM or IV, for full-term infants or 20,000 units, IM or IV, for low-birth-weight infants. Topical prophylaxis for neonatal ophthalmia is not adequate treatment for infections at other sites. Clinical illness requires additional treatment.

Neonatal Gonococcal Infections

Gonococcal Ophthalmia

Neonates with gonococcal ophthalmia should be hospitalized and isolated for 24 hours after initiation of treatment. Untreated gonococcal ophthalmia is highly contagious and may rapidly lead to blindness. Aqueous crystalline penicillin G 50,000 units/kg/day, IV, in 2 doses should be administered for 7 days. Eyes should be irrigated immediately with saline or buffered ophthalmic solutions and then at least at hourly intervals as long as necessary to eliminate discharge. Topical antibiotic preparations alone are neither sufficient nor required when appropriate systemic antibiotic therapy is given. Both parents of newborns with gonococcal ophthalmia must be treated.

Penicillinase-Producing *Neisseria gonorrhoeae*

Neonates should be treated with cefotaxime or gentamicin in appropriate neonatal doses.

Complicated Infection

Neonates with arthritis and septicemia should be hospitalized and treated with aqueous crystalline penicillin G 75,000-100,000 units/kg/day, V, in 4 divided doses for at least 7 days. Meningitis should be treated with aqueous crystalline penicillin G 100,000 units/kg/day, IV, divided into 3 or 4 doses and continued for at least 10 days.

Gonococcal Infections of Older Children

Children who weigh 100 lbs (45 kg) or more should receive adult regimens. Children who weigh less

than 100 lbs should be treated as follows.

Uncomplicated Disease

Uncomplicated vulvovaginitis and urethritis can be treated at 1 visit with amoxicillin 50 mg/kg plus probenecid 25 mg/kg (maximum 1.0 g), both given orally, OR with aqueous procaine penicillin G 100,000 units/kg, IM, plus probenecid, by mouth, 25 mg/kg (maximum 1.0 g). The latter regimen is recommended for proctitis and pharyngitis.

Penicillinase-Producing *Neisseria gonorrhoeae*

Children with infection due to PPNG should be treated with spectinomycin or cefotaxime in appropriate doses.

Special Considerations

Topical and/or systemic estrogen therapy are of no benefit in vulvovaginitis. Long-acting penicillins, such as benzathine penicillin G, are not effective. All patients should have follow-up cultures, and the source of infection should be identified, examined, and treated.

Allergy to Penicillins

Children who are allergic to penicillins should be treated with spectinomycin 40 mg/kg, IM. Children older than 8 years may be treated with tetracycline 40 mg/kg/day, by mouth, in 4 divided doses for 5 days. For treatment of complicated disease, the alternative regimens recommended for adults may be used in appropriate pediatric dosages.

COMMON STD-ASSOCIATED SYNDROMES

Several, often serious, clinical syndromes are associated with STD. Some are more clearly defined than others. The following guidelines outline approaches to the initial treatment of these conditions *when complete bacteriologic evaluation is not possible* or while the physician awaits the results of specific laboratory tests.

Nongonococcal Urethritis

Urethritis not associated with *N. gonorrhoeae* is usually caused by *C. trachomatis* or *Ureaplasma urealyticum*. Nongonococcal ure-

thritis (NGU) requires prompt antimicrobial treatment of the patient and evaluation and treatment of sexual partner(s).

Drug Regimens of Choice

Tetracycline HCl: 500 mg, by mouth, 4 times a day for at least 7 days.

OR

Doxycycline: 100 mg, by mouth, twice a day for at least 7 days.

Alternative Regimen

(for patients in whom tetracyclines are contraindicated or not tolerated)

Erythromycin: 500 mg, by mouth, 4 times a day for at least 7 days.

Management of Sexual Partners

All persons who are sexual partners of patients with NGU should be examined for STD and promptly treated with one of the above regimens.

Follow-up

Patients should be advised to return if symptoms persist or recur.

Persistent or Recurrent NGU

Recurrent NGU may be due to failure to treat the sexual partner(s). Patients with persistent or recurrent objective signs of urethritis after adequate treatment of the patient and partner(s) warrant further evaluation for less common causes of urethritis.

Acute Pelvic Inflammatory Disease

(Endometritis, Salpingitis, Parametritis, and/or Peritonitis)

Acute pelvic inflammatory disease (PID) refers to the acute clinical syndrome attributed to the ascending spread of microorganisms, unrelated to pregnancy or surgery, from the vagina and endocervix to the endometrium, fallopian tubes, and/or contiguous structures.

Etiologic agents include *N. gonorrhoeae*, *C. trachomatis*, anaerobic bacteria (which include *Bacteroides* and gram-positive cocci), facultative gram-negative rods (such as *Escherichia coli*), *Actinomyces israelii*, and *Mycoplasma hominis*. In the individual patient it is often impossible to differentiate among these agents. Treatment regimens should be used that are

active against the broadest range of these pathogens.

Hospitalization and Inpatient Treatment

Hospitalization of patients with acute PID should be strongly considered when: 1) the diagnosis is uncertain, 2) surgical emergencies such as appendicitis and ectopic pregnancy must be excluded, 3) a pelvic abscess is suspected, 4) severe illness precludes outpatient management, 5) the patient is pregnant, 6) the patient is unable to follow or tolerate an outpatient regimen, 7) the patient has failed to respond to outpatient therapy, or 8) clinical follow-up after 48-72 hours following the start of antibiotic treatment cannot be arranged. Many experts recommend that all patients with PID be hospitalized for treatment.

Rationale for Selection of Antimicrobials

The treatment of choice is not established. No single agent is active against the entire spectrum of pathogens. Several antimicrobial combinations do provide a broad spectrum of activity against the major pathogens *in vitro*, but many have not been adequately evaluated for clinical efficacy in PID.

Examples of Combination Regimens with Broad Activity against Major Pathogens in PID

Doxycycline: 100 mg, IV, twice a day

PLUS

Cefoxitin: 2.0 g, IV, 4 times a day

Continue drugs IV for at least 4 days and at least 48 hours after patient defervesces. Continue doxycycline 100 mg, by mouth, twice a day after discharge from the hospital to complete 10-14 days of therapy.

Comment: This regimen provides optimal coverage for *N. gonorrhoeae*, including PPNG, and *C. trachomatis*. It may not provide optimal treatment for anaerobes, pelvic mass, or PID associated with an intrauterine device (IUD).

Clindamycin: 600 mg, IV, 4 times a day

PLUS

Gentamicin or tobramycin: 2.0 mg/kg, IV, followed by 1.5 mg/kg,

IV, 3 times a day in patients with normal renal function

Continue drugs IV for at least 4 days and at least 48 hours after patient defervesces. Continue clindamycin 450 mg, by mouth, 4 times a day after discharge from the hospital to complete 10-14 days of therapy.

Comment: This regimen provides optimal activity against anaerobes and facultative gram-negative rods, but may not provide optimal activity against *C. trachomatis* and *N. gonorrhoeae*.

Doxycycline: 100 mg, IV, twice a day

PLUS

Metronidazole: 1.0 g, IV, twice a day

Continue drugs IV for at least 4 days and at least 48 hours after patient defervesces. Then continue both drugs at same dosage orally to complete 10-14 days of therapy.

Comment: Provides excellent coverage for anaerobes and *C. trachomatis*. Both drugs can be continued for oral therapy. Activity against some strains of *N. gonorrhoeae*, including PPNG, and some facultative gram-negative rods is not optimal.

Ambulatory Treatment

When the patient is not hospitalized, one of the following combination regimens is recommended:

Cefoxitin: 2.0 g, IM, OR amoxicillin: 3.0 g, by mouth, OR ampicillin: 3.5 g, by mouth, OR aqueous procaine penicillin G: 4.8 million units, IM, at 2 sites; each along with probenecid 1.0 g, by mouth

FOLLOWED BY

Doxycycline: 100 mg, by mouth, twice a day for 10-14 days

Tetracycline HCl 500 mg, by mouth, 4 times a day can also be used, but is less active against certain anaerobes and requires more frequent dosing; both represent drawbacks in treatment of PID.

Comment: Cefoxitin or an equivalently effective cephalosporin plus doxycycline (or tetracycline) provides activity against *N. gonorrhoeae*, including PPNG, and *C. trachomatis*. PPNG-associated PID is not adequately treated with the combination of either amoxicillin, ampicillin, or aqueous procaine

penicillin plus doxycycline.

Management of Sexual Partners

All persons who are sexual partners of patients with PID should be examined for STD and treated promptly with a regimen effective against uncomplicated gonococcal and chlamydial infection.

Follow-up

All patients treated as outpatients should be clinically reevaluated in 48-72 hours. Those not responding favorably should be hospitalized. For test of cure, a culture should be done as appropriate for pathogens initially isolated.

Intrauterine Device

The IUD is a risk factor for the development of PID. Although the exact effect of removing an IUD on the response of acute salpingitis to antimicrobial therapy and on the risk of recurrent salpingitis is unknown, removal of the IUD is recommended soon after antimicrobial therapy has been initiated. When an IUD is removed, contraceptive counseling is necessary.

Acute Epididymo-orchitis

Acute epididymo-orchitis has 2 forms: a sexually transmitted form usually associated with urethritis and commonly caused by *C. trachomatis* and/or *N. gonorrhoeae* and a non-sexually transmitted form associated with urinary tract infections caused by Enterobacteriaceae or *Pseudomonas*. Urine should be examined by Gram stain and culture to exclude bacteruria in all patients, including those with urethritis. Testicular torsion is a surgical emergency that should be considered in all cases.

Sexually Transmitted Epididymo-orchitis

Sexually transmitted epididymo-orchitis occurs in young adults and is associated with presence of urethritis, absence of underlying genitourinary pathology, and absence of gram-negative rods on Gram stain of urine.

Drug Regimens of Choice

Tetracycline HCl: 500 mg, by mouth, 4 times a day for at least 10 days

OR

Doxycycline: 100 mg, by mouth, twice a day for at least 10 days

Alternative Regimens

Alternative regimens have not been well studied. The following regimens can be considered in patients who cannot tolerate tetracycline:

Gonococcal urethritis and epididymitis:

Amoxicillin: 500 mg, by mouth, 3 times a day for at least 10 days

(For epididymitis caused by PPNG, clinical experience is limited, but a 10-day course of therapy with oral trimethoprim/sulfamethoxazole or parenteral cefotaxime, cefoxitin, or spectinomycin can be used.)

Nongonococcal urethritis and epididymitis:

Erythromycin: 500 mg, by mouth, 4 times a day for at least 10 days

Management of Sexual Partners

Sexual partners of patients with sexually transmitted acute epididymo-orchitis should be examined for STD and promptly treated with a regimen effective against uncomplicated gonococcal and chlamydial infection.

Adjuncts to Therapy

Bed rest and scrotal elevation until fever and local inflammation have subsided are recommended.

Follow-up

Failure to improve within 3 days requires reevaluation of diagnosis/therapy and consideration for hospitalization. Persistence of swelling for longer than 1 month should lead to evaluation for tumor.

Non-Sexually Transmitted Acute Epididymo-orchitis

Management includes prompt administration of broad-spectrum antimicrobial therapy. Choice of therapy is initially dictated by the severity of infection and later by results of urine culture and sensitivity tests. Evaluation for underlying urinary tract disease is indicated. Adjuncts to therapy and follow-up are the same as for sexually transmitted epididymo-orchitis.

Common STD Syndromes in Women

There are 3 common, yet less well defined, syndromes associated with STD in women. Clinicians are encouraged to familiarize themselves with these syndromes because they cause women a great deal of discomfort and may be associated with important pathogens.

Vaginal Discharge Associated with *Gardnerella Vaginalis**

This syndrome consists of non-irritating, odoriferous, thin, grayish-white vaginal discharge; elevated vaginal pH (greater than 4.5); and the elaboration of malodorous amines from discharge fluid after alkalization with KOH. Microscopic examination typically reveals the absence of gram-positive rods and the presence of small coccobacillary organisms associated with epithelial cells (so-called "clue cells"). It is now believed that *Gardnerella* act synergistically with anaerobic bacteria to produce the syndrome.

Treatment

The following treatment may be used:

Metronidazole: 500 mg, by mouth, twice a day for 7 days

Alternative Regimen

Ampicillin: 500 mg, by mouth, 4 times a day for 7 days is less effective but is suggested for pregnant patients or individuals for whom metronidazole is contraindicated.

Asymptomatic Carriers

Treatment is not recommended for asymptomatic carriers of *G. vaginalis*.

Management of Sexual Partners

Treatment of male sexual partners is controversial and may be indicated in specific instances of recurrence in the woman. Available data suggest that either metronidazole 500 mg, by mouth, twice a day for 7 days or ampicillin 500 mg, by mouth, 4 times a day for 7 days should be used.

Mucopurulent Cervicitis

The presence of mucopurulent endocervical exudate often reflects cervicitis due to chlamydial or gonococcal infection.

*Formerly called *Haemophilus vaginalis* or *Corynebacterium vaginale*.

gonococcal infection. Nongonococcal mucopurulent cervicitis responds to tetracycline therapy.

Treatment

1. If *N. gonorrhoeae* is found on Gram stain or culture of endocervical or urethral discharge, treatment should be given as recommended for uncomplicated gonorrhea in adults.

2. If chlamydial infection is proven or suspected, treatment should be given as recommended for chlamydial infection in adults.

Alternative Regimens

Alternate regimens have not been studied.

Management of Sexual Partners

Men exposed to women with mucopurulent cervicitis attributed to gonococcal or chlamydial infection should be evaluated for STD and treated as recommended for contacts exposed to gonorrhea or chlamydial infection.

Follow-up

Posttreatment cultures are indicated for any pathogen (e.g., *C. trachomatis*; *N. gonorrhoeae*) isolated before therapy.

Urethral Syndrome (Dysuria-Frequency Syndrome)

Women with dysuria, frequency, pyuria (10 leukocytes per 400 X field on microscopic examination of urinary sediment), and a negative Gram stain of unspun urine have the acute urethral syndrome and may be infected either with *C. trachomatis*, with *N. gonorrhoeae*, or with gram-negative bacilli present in quantities of 10^2 - 10^4 /ml. Cultures of the urethra or urine are needed to clearly differentiate these agents in individual patients.

Dysuria, when not associated with frequency, may be due to either vaginitis or genital herpes simplex virus infection, and patients with dysuria alone should be evaluated for these infections, as well as those outlined above.

Treatment of patients with sexually transmitted urethral syndrome, management of their sexual partners, and their follow-up are as described above for mucopurulent cervicitis.



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Each prolonged action tablet contains: Phenylephrine Hydrochloride 25 mg
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Comprehensive decongesting, antihistaminic and anti-secretory reliever for patients with nasal, sinus and other upper respiratory irritation.

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One tablet b.i.d. gives round-the-clock relief to adults and older children (12 years and over).



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Each fluid ounce contains: Codeine Phosphate 65.8 mg • (WARNING: MAY BE HABIT FORMING) Phenylephrine Hydrochloride 30 mg • Phenylpropanolamine Hydrochloride 20 mg • Pheniramine Maleate 20 mg • Pyrilamine Maleate 20 mg • Ammonium Chloride 200 mg • Alcohol 5%

Full range symptom-reliever for patients with air way congestion in the upper chest as well as the nose and throat.

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Tablets

DESCRIPTION

Each prolonged action tablet contains:

Phenylephrine Hydrochloride	25 mg
Phenylpropanolamine Hydrochloride	50 mg
Chlorpheniramine Maleate	8 mg
Hyoscyamine Sulfate	0.19 mg
Atropine Sulfate	0.04 mg
Scopolamine Hydrobromide	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours

Ru-Tuss Tablets are an oral antihistaminic, nasal decongestant and anti-secretory preparation.

INDICATIONS AND USAGE Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues. Phenylephrine and phenylpropanolamine combine to exert a vasoconstrictive and decongestive action while chlorpheniramine maleate decreases the symptoms of watering eyes, post nasal drip and sneezing which may be associated with an allergic-like response. The belladonna alkaloids, hyoscyamine, atropine and scopolamine further augment the anti-secretory activity of Ru-Tuss Tablets.

CONTRAINDICATIONS Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

WARNINGS Ru-Tuss Tablets may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

PRECAUTIONS Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with glaucoma, or urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See Warnings).

OVERDOSAGE Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdoses may produce convulsions and death.

ADVERSE REACTIONS Hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

DOSAGE AND ADMINISTRATION Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

HOW SUPPLIED

Bottles of 100 Tablets

Bottles of 500 Tablets

Federal law prohibits dispensing without prescription.

NDC 0524-0058-01

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RU-TUSS[®]

Expectorant

DESCRIPTION

Each fluid ounce of Ru-Tuss Expectorant contains:

Codeine Phosphate	(WARNING: MAY BE HABIT FORMING)
Phenylephrine Hydrochloride	
Phenylpropanolamine Hydrochloride	
Pheniramine Maleate	
Pyriminamine Maleate	
Ammonium Chloride	
Alcohol	

Ru-Tuss Expectorant is an oral antitussive, antihistaminic, nasal decongestant and expectorant preparation.

INDICATIONS AND USAGE Ru-Tuss Expectorant is indicated for symptomatic relief of respiratory congestion associated with pharyngitis, tracheitis, bronchitis, and allergic rhinitis. Also, for the temporary relief of symptoms associated with hay fever, allergic rhinitis, congestion and cough due to the common cold.

CONTRAINDICATIONS Hypersensitivity to antihistamines. Concomitant use of a hypertensive or antidepressant drug containing a monoamine oxidase inhibitor is contraindicated.

Ru-Tuss Expectorant is contraindicated in patients with glaucoma, bronchial asthma, and in women who are pregnant.

WARNINGS Ru-Tuss Expectorant contains codeine phosphate, therefore, the patient should be warned of the potential that this drug may be habit forming. Ru-Tuss Expectorant may cause drowsiness. Patients should be warned of the possible additive effect caused by taking antihistamines with alcohol, hypnotics, sedatives and tranquilizers.

PRECAUTIONS Patients taking Ru-Tuss Expectorant should avoid driving a motor vehicle or operating dangerous machinery (See Warnings). Caution should be taken with patients having hypertension, diabetes, hyperthyroidism and cardiovascular disease. Caution should also be used in patients with pulmonary, hepatic or renal insufficiency.

ADVERSE REACTIONS Ru-Tuss Expectorant may cause drowsiness, lassitude, general dryness of mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, and insomnia. Overdoses may cause restlessness, excitation, delirium, tremors, euphoria, metabolic acidosis, stupor, tachycardia or convulsions.

DOSAGE AND ADMINISTRATION Adults, 1 or 2 teaspoonfuls, orally, every 4 hours, not to exceed 10 teaspoonfuls in any 24-hour period.

Children 6 to 12 years of age: $\frac{1}{2}$ the adult dose, not to exceed 6 teaspoonfuls in any 24-hour period. Children 2 to 6 years of age: $\frac{1}{2}$ teaspoonful every 4 hours, not to exceed 3 teaspoonfuls in any 24-hour period. Children under 2 years of age should be directed by a physician.

HOW SUPPLIED: (16 fl. oz.)

Pint Bottles

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Toxic Encounters of the Dangerous Kind

Historic Paint

Jorge J. Gonzalez, M.D., and Peter C. Ungaro, M.D.

MIDDLE CLASS SATURNISM

This month we are pleased to welcome a guest contribution by Drs. Jorge J. Gonzalez and Peter C. Ungaro from the Department of Medicine, University of North Carolina School of Medicine and New Hanover Memorial Hospital, Wilmington, N.C. Their timely article is entitled, aptly, "Historic Paint." Our editor reminds us that short case reports, such as this, will be welcomed.

—R.B.M.

A short time ago we had the opportunity of seeing a patient with lead intoxication who demonstrated the risks involved in tinkering with history. This 60-year-old white male was admitted in a subacute confusional state, being disoriented to time, person and space for several days before admission. Examination revealed a confused white male in acute distress. Physical examination disclosed bilateral papilledema and moderate peripheral neuropathy. Laboratory examination upon admission showed a hemoglobin of 10 g/dl with normal indices and RBC basophilic stippling on peripheral smear. A serum lead was markedly elevated (230 ug/dl; normal less than 40) and chelation with 1 g ethylenediaminetetraacetic acid (EDTA) increased urine lead excretion to greater than 16.6 mg/24 hrs. (normal less than 0.5 mg). A course of five days chelation with EDTA resulted in disappearance of the papilledema and the resolution of the confusional state.¹ It was then learned that the patient had worked as a paint remover in historical homes. He used a powerful sander and had completely disregarded the use of respirators or any other type of protective equipment. He stated that he was constantly under a "shower" of paint flakes that his sander generated and remarked that the paint tasted like "vanilla." His food was frequently exposed to these paint flakes and became contaminated before its consumption.

It is well known that old paint can have an extremely

high content of lead and that cases of subacute and acute lead intoxication occur frequently in individuals working on "urban" restoration deleading projects. This report of a patient with subacute lead intoxication emphasizes the need for respiratory protection when removing leaded paint. Considering the restoration fad sweeping our state, as well as our nation, "do it yourselves" would be well advised to seek professional advice in the selection of respirators and masks that would protect them from lead intoxication during restoration work. The paint particles generated by paint removal, especially by sanding, can be absorbed through the respiratory system and produce intoxication. The Division of Occupational Hygiene of the Massachusetts Department of Public Health has reported that five minutes of sanding of an inside window sill results in seeding the air with 0.55 mg lead/mc³.² This concentration is far above the limit for which respiratory protection is recommended. A simple respirator would avoid such unfortunate "toxic encounters."

COMMENT

We are all aware by now of the movement of some people back into the city and out of the suburbs. This often involves the restoration of older dwellings, many of which have lead-based paint on the walls, door jambs and frames, woodwork and window sills. To pay someone to do this for you can be quite expensive so many back-to-the-city people attempt to abate the lead-based paint themselves. This exercise can be less expensive, more tiring and infinitely more dangerous than hiring the few experts available in this field. Merely painting over the lead-based painted surfaces is unacceptable. The more common methods that are acceptable are: (1) scraping and sanding, (2) utilizing solvents to remove the paint and (3) heating or (4) covering.

(1) *Scraping and sanding* unquestionably requires
(Continued on page 847)

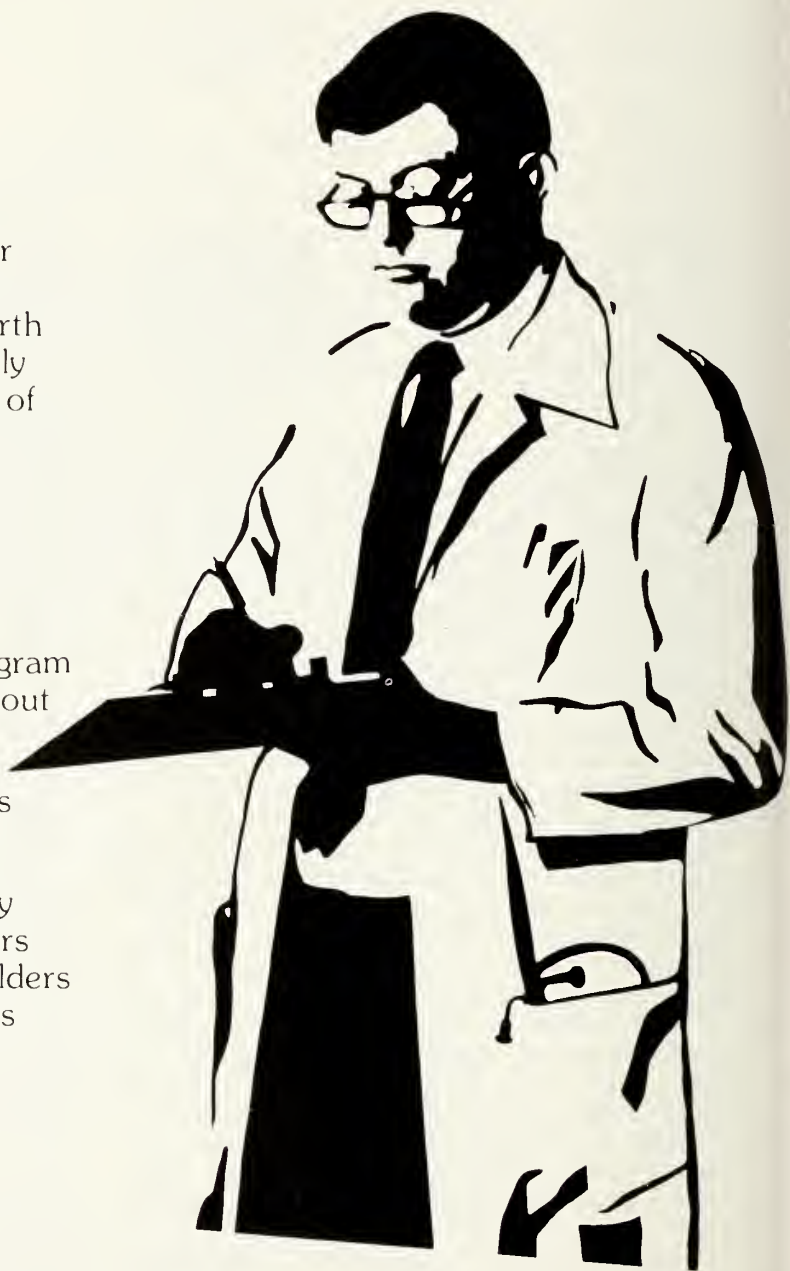
From the Department of Medicine, University of North Carolina School of Medicine and New Hanover Memorial Hospital, Wilmington, N.C.

Reprint requests to Dr. Gonzalez at New Hanover Memorial Hospital, 2131 South 17th St., Wilmington, N.C. 28402.

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the most physical labor. In addition, this method mandates the use of a respirator at all times during the procedure as well as the use of goggles and protective clothing. One can only imagine the amount of lead containing dust that accumulates; dust collectors and proper ventilation are a must.

(2) Using *solvents*, such as methylene chloride, to remove the paint is even more frightening. The dangers involved with this method include the inhalation of toxic vapors, burns, fires and explosions. The solvents merely soften the paint after which sanding is required. The minimal safety requirements for this method are skill in proper solvent use, a respirator designed for specific protection against organic vapors, impervious gloves, goggles and protective clothes as well as proper ventilation and a supply of fire extinguishers.

(3) If you decide to use *heat* to remove the leaded paint you must worry about the great danger resulting from the inhalation of lead fumes. These fumes are very toxic even when inhaled in small concentration. Apparently lead is absorbed in much greater quantities by the respiratory route than when it is ingested. The heat supply used is either from a gas-fired torch, an infra-red lamp or an electric heat gun. The threat of fire and/or fumes is the big worry here. The heating method is thought to be the most dangerous in terms of poisoning the lead-removers and the occupants of the dwelling. The minimal requirements for someone who chooses this method are skill in the use of the particular heating device, a respirator approved by the U.S. Bureau of Mines, goggles, protective clothing, fire extinguishers and an open phone line to the nearest

fire department. The experts claim that the heat source should only be used to soften the paint and then the paint scraped off; this is much safer.

(4) *Covering* the lead-based painted surfaces is probably the way I would go if I had to do it myself. This method is less expensive, safer and more acceptable than any of the other methods. One could use such coverings as hardboard, plywood paneling, wallboard, fiberglass, vinyl wall covering, etc. These coverings must be properly secured to the walls as well as be vermin-proof, fire resistant or retardant. The woodwork, if painted with a lead base paint, must be stripped or scraped to bare wood and then painted if one wishes, but only with non-leaded paint. Loose putty that is leaded must be removed and replaced. Needless to say, when you finish de-leading you must dispose of the dumb stuff. All lead debris should be placed in plastic bags and sealed and taken to a sanitary land fill.

All of this has made me very tired just to think about it. Why would anybody want to move back into an old city anyway?

RONALD B. MACK, M.D.
Associate Professor of Pediatrics
Bowman Gray School of Medicine and
Chairman, Committee on Accidents
and Poison Prevention
N.C. Chapter of the American Academy
of Pediatrics

References

1. Morgan JM. Chelation therapy in lead nephropathy. *Southern Med J* 1975;68:1001-1006.
2. Feldman RG. Urban lead mining: lead intoxication among deleaders. *N Engl J Med* 1978;298:1143-1145.

CHARLES DICKENS [1812-1870]

Mr. Bayham Badger, who had a good practice at Chelsea, and attended a large public Institution besides . . . was a pink, fresh-faced, crisp-looking gentleman, with a weak voice, white teeth, light hair, and surprised eyes: some years younger, I should say, than Mrs. Bayham Badger. He admired her exceedingly, but principally, and to begin with, on the curious ground (as it seemed to us) of her having had three husbands.

Bleak House, Ch. 13

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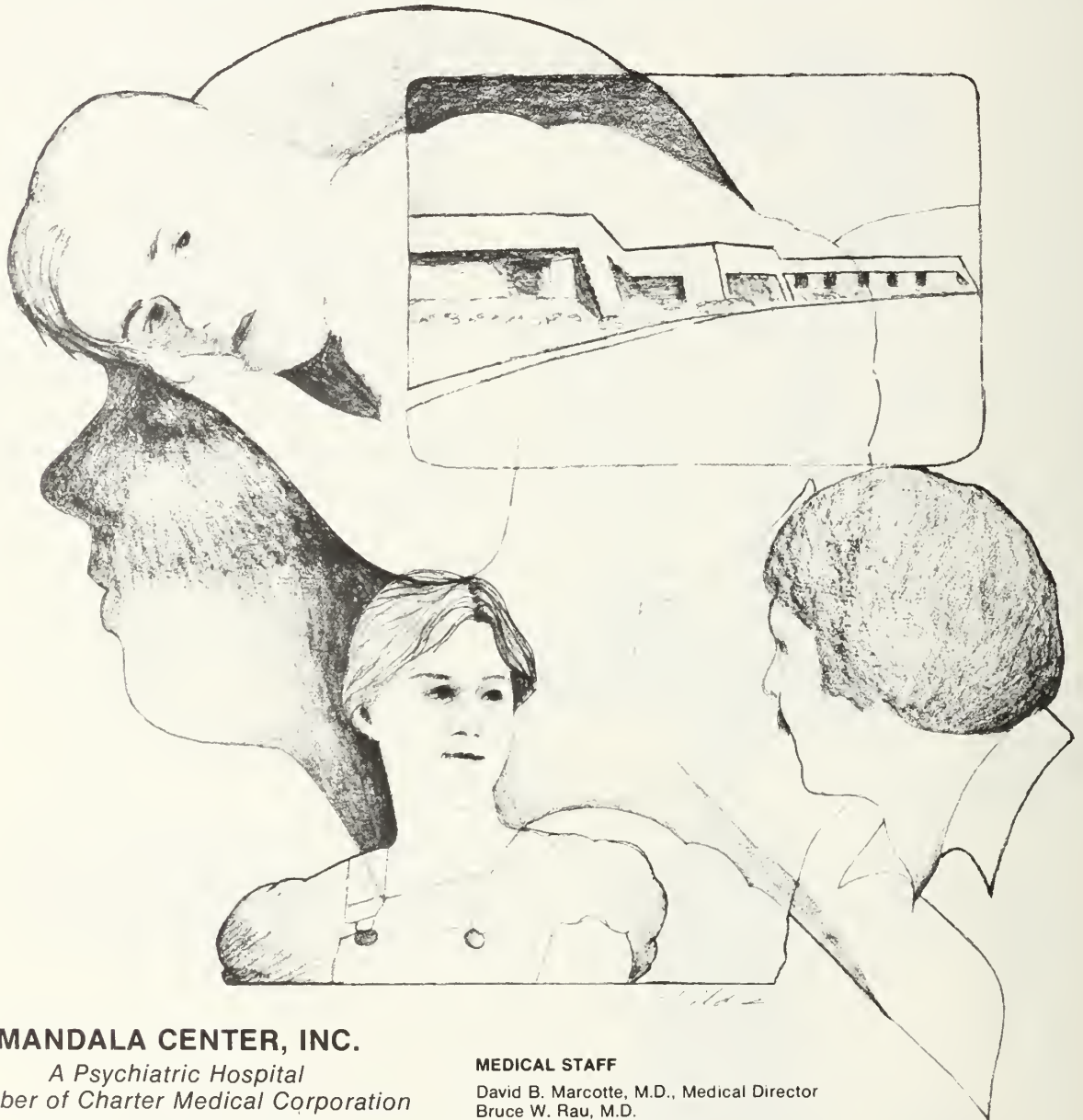
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Editorials

LEAD: HAZARDOUS TO YOUR HEALTH

One of the great satisfactions in the practice of medicine lies in making the correct diagnosis, then treating the patient quickly and effectively. The more unusual the problem, the rarer the disease, the greater the satisfaction, and the more likely a case report. Some triumphs must be shared, particularly when others might benefit.

Cases of poisoning, intentionally or accidentally, are particularly satisfying when solved, as witness the thriving trade in novels of detection and in clinical pathological conferences. What is better testimonial to the value of preparing the mind than making the observation missed by others, the transformation of trivia to happy outcome.

Lead poisoning has long been a favorite diagnostic suspicion, particularly when the patient works for a battery factory, chews paint on a crib or prefers white to tax-paid liquor. Not surprisingly, Benjamin Franklin was one of the first Americans to be concerned about lead poisoning attributing it to "a metallic cause only; observing that it affects, among tradesmen, those who use lead, however different their trades: as glaziers, letter-founders, plumbers, potters, white-lead makers, and painters."¹ He is reputed to have recognized the intoxication in an avid drinker of rum, appreciating that the pipes involved in the transformation of molasses were of lead, a process to be repeated again and again in our own North Carolina hills and swamps as lead radiators replaced copper in the preparation of white lightning.

Bird and his colleagues² have recently contributed yet another example of the mysterious behavior of lead and why ignorance is really not bliss. It seems that a rather nomadic husband and wife suffered from sporadic neuropathy, abdominal difficulties and anemia which led first to the diagnosis of acute intermittent porphyria in the wife. Eventually, the correct diagnosis of lead poisoning was made and the couple adequately treated. Their difficulties were traced to the purchase in Italy of a lot of earthenware pottery with a clear gaze. The pottery was heavily leaded and poisoning resulted because each patient when at home had drunk eight cups of coffee a day from an earthenware vessel.

The authors stress three points in their comment. The first was that acute intermittent porphyria and lead poisoning cannot be distinguished historically or by the physical examination. Secondly, the diagnosis once suspected can be easily confirmed by pertinent laboratory studies. Finally, lead poisoning from earthenware remains an important worldwide epidemiological problem. It has certainly been so for

centuries, serious enough to allow speculation that Rome declined because its ruling class drank too much wine from too many contaminated containers.

They might have added a fourth point, perhaps too mundane for the usual case report: eight cups of coffee a day can be hazardous to your health, lead-free or not.

J.H.F.

References

1. Franklin B cited by Van Doren Carl. Benjamin Franklin. New York: The Viking Press, 1938:423.
2. Bird TD, Wallace DM, Labbe RF. The porphyria, plumbism, pottery puzzle. JAMA 1982;247:813-814.

MILK

** Milk - of human kindness
- and honey, land of
- sop
- toast
- train
Cream - as rich as*

May 28 was the last day for home delivery of milk in our town. One by one our dairies dropped out as their routes grew longer and their customers fewer. It is cheaper under OPEC to rely on supermarkets and convenience stores than to maintain a tradition at a loss. We do, after all, live in a post-industrial society with provisions only in memory for the horse drawn milk wagon and the early morning milk and mail train. Why should not the milk truck go the same way? In an earlier time, the family cow, demanding to be milked every day, marked our agricultural society, either on the farm or gone to town but bringing cow, barn and garden.

By one of those coincidences beloved by the editorial writer, May 29, the day after we lost our delivery, was National Dairy Day, so sanctioned by our Secretary of Agriculture, Mr. Block. Among other expressions of loyalty to the industry was the displaying of the world's largest cheese sandwich and the world's largest bovine balloon. The festivities began, however, on May 28 with a milk-punch and cheese reception, presumably in Washington.

The politics of milk¹ certainly dictate that the reception should have been held in our nation's capital. There are two major federal programs to help the milk industry: the marketing-order and the price-support systems, judged politically and economically necessary for dairy farmers by our legislators who have increased milk-support prices and government purchases of milk products as consumption has decreased. That is where all that surplus cheese being dispensed to the needy comes from.

Why are we drinking less milk, forcing our govern-

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Warnings

Usage in Pregnancy Reproduction studies have been performed in animals and there was no evidence of propensity for harm to the fetus. The relevance to the human is not known. There is no experience in pregnant women who have received this drug.

The drug has not been extensively studied in children under two years; therefore, in the treatment of children under the age of two years, the relative benefit/risk should be considered.

Precautions

Minor transient elevations of SGOT have occurred in a small percentage of patients. Therefore, this drug should be used with caution in patients with pre-existing liver dysfunction.

Adverse Reactions

The most frequently encountered adverse reactions are related to the gastrointestinal system. Gastrointestinal and hepatic reactions: anorexia, nausea, vomiting, gastralgia, abdominal cramps, diarrhea and tenesmus, transient elevation of SGOT.

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Dosage and Administration

Children and Adults Antiminth Oral Suspension (50 mg of pyrantel base/ml) should be administered in a single dose of 11 mg of pyrantel base per kg of body weight (or 5 mg/lb.); maximum total dose 1 gram. This corresponds to a simplified dosage regimen of 1 ml of Antiminth per 10 lb. of body weight. (One teaspoonful = 5 ml.)

Antiminth (pyrantel pamoate) Oral Suspension may be administered without regard to ingestion of food or time of day, and purging is not necessary prior to, during, or after therapy. It may be taken with milk or fruit juices.

References 1. Pitts NE, Migliardi JR: *Clinical Pediatrics* 13:87, 1974. 2. Modell W: *Drugs of Choice* 1980-1981. C. V. Mosby Co., St. Louis, 1980, p. 362. 3. Goodman LS, Gilman A: *The Pharmacologic Basis of Therapeutics*, 6th edition, MacMillan Publishing Co., Inc., New York, 1980, p. 1032.

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ment into declaring cheese dividends? Presumably because milk, once a nutritious friend rich in almost everything but iron, has in the last 20 or 30 years become a dietary villain, attacking us with fat to harden our arteries and soften our senses. Television, too, plays its inevitable role: bringing news of great, new life-expanding soft drinks and fashionable light beer, beloved by athletes who used to drink milk to ensure strong bones and sound teeth. This calorie consciousness hasn't made us any skinnier but it has allowed us to assuage our consciences by banishing milk from our table and refrigerator.

The competition has been keen and the dairy folks who used to say "You can whip our cream but you can't beat our milk" have even lost out at the coffee break where non-dairy creamers and synthetic sweeteners reign. This defeat may be partly the dairyman's own doing. Remember the old wasp-wasted, busty milk bottle which let cream rise to the top for easy access. This attraction was lost forever by homogenizing and by the introduction of new, modern milk cartons so that the old song which demanded that the "milkman, keep those bottles quiet" can hardly be understood in contemporary America.

But this nostalgic romp needs some points of medical reference other than cholesterol. So let us look back again to the time of the milk wagon and to the birth of bacteriology. The horse is gone from our streets and with it tetanus is almost unheard of and we recognize in pasteurization both the father of bacteriology and the process that makes it possible for us

to worry about butterfat and to think no more of brucellosis and bovine tuberculosis. And without the bacteriology of milk with its coliform counts, where would we be diagnostically and therapeutically in handling urinary tract infection? Because we use standardized dairy loops in the quantitative culturing of urine.

Milk's day is hardly done, however, although many of the world's peoples are deficient in intestinal lactase. Milk is a valuable source of protein; it provides calcium in abundance and is easily and relatively cheaply (despite our federal programs) available. Some, in fact many, people say it is good and still like it better than beer, soft drinks or coffee. And milk is a symbol, usually of prosperity, of beneficence and bounty. Even milk sop and milk toast are not derogatory to the liquid, simply to people who seem more childlike than adult. And children do need milk as nature has obviously decreed.

Perhaps Robert Louis Stevenson summed it up best for children — and for their parents —

*The friendly cow, all red and white,
I love with all my heart.
She gives me cream with all her might
To eat with apple tart*

Let us hope that the balloon was red and white.

J.H.F.

Reference

1. Milk: Could it taste better? Could it cost less? *Consumers Reports* 1982;47:286-294.

Bulletin Board

New Members

BUNCOMBE

Lorenzo, Luisa Almedia, (EM) 1812 Hendersonville Road, Asheville 28803

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McCracken, J. Stuart, 2609 N. Duke St. #203, Durham 27704

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Kahn, Robert Charles, (GS) 416 Circle Drive, Ahoskie 27910

What? When? Where?

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME programs sponsored or cosponsored by these schools automatically qualify for AMA Category I credit toward the AMA's Physician Recognition Award, and for North Carolina Medical Society Category A credit. Where AAFP credit has been requested or obtained, this also is indicated. 2. The "place" and "sponsor" are indicated for a program only when these differ from the place and source to write "for information."

In State

January 9-12

"Advanced Clinical Teaching Skills"

Place: Rougemont

Credit: 20 hours

Info: Katharine Munning, Ph.D., Duke-Watts Family Medicine Program, 407 Crutchfield Street, Durham, NC 27704, 919-471-2571

January 12

"The Investigation of Sudden Death—Beginning at the Scene"

Place: Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

January 14, 15 & 16

"Clinical Hypnosis and Habit Control"

Place: Durham

Fee: \$150

Credit: 16 hours

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

January 22

"Fourth Annual Pulmonary Disease Update"

Place: Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

January 24-26

"Getting Started in Medical Computing"

Place: Durham

Credit: 20 hours

Info: Cindi Easterling, Office of Continuing Medical Education, Duke University Medical Center, Box 3306, Durham, NC 27710, 919-684-6485

January 27

"The Fourth Duke Cardiology Seminar"

Place: Durham

Credit: 6.5 hours

Info: Judy Berry, Division of Cardiology, Box 31211, Duke University Medical Center, Durham, NC 27710, 919-684-2255

February 9

"Biological Aspects of Child Psychiatry"

Place: Greenville

Fee: \$25

Credit: 3 hours, AAFP applied for

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville NC 27834, 919-758-5200

February 14-18

"Microsurgery Workshop"

Place: Durham

Fee: \$600 (\$550 for Resident in Training)

Credit: 40 hours

Info: Donald Serafin, M.D., PO Box 3372, Duke University Medical Center, Durham, NC 27710

February 20-23

"Improving Residency Rotations: Curriculum Planning and Negotiations"

Place: Rougemont

Credit: 20 hours

Info: Katharine Munning, Ph.D., Duke-Watts Family Medicine Program, 407 Crutchfield Street, Durham, NC 27704, 919-471-2571

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(704) 253-3681

February 21-23

"Selected Topics For the Practicing Clinician"

Place: Durham

Credit: 24 hours, AAFP applied for

Info: Cindi Easterling, Office of Continuing Medical Education, Duke University Medical Center, Box 3306, Durham, NC 27710, 919-684-6485

January & February

"1st District Medical Society Post Graduate Course"

Place: Edenton, Elizabeth City and Ahoskie

Credit: 12 hours, AAFP applied for

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

March 3-5

"Diving Accident and Hyperbaric Oxygen Treatment"

Place: Durham

Fee: \$280

Credit: 22 hours

Info: Yancey Mebane, M.D., Duke University Medical Center, Box 3823, Durham, NC 27710, 919-684-5514

March 9

"Family Medicine and the Elderly Patient"

Place: Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

March 9-12

"Internal Medicine 1983"

Place: Chapel Hill

Fee: \$175

Credit: 25 hours, AAFP applied for

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

March 27-30

"Administrative Shells: Faculty as Managers"

Place: Rougemont

Credit: 20 hours

Info: Katharine Munning, Ph.D., Duke-Watts Family Medicine Program, 407 Crutchfield Street, Durham, NC 27704, 919-471-2571

Out of State

January 8-15

"1983 CME Cruise/Conference on Medical-Legal Issues"

Place: Puerto Rico, St. Thomas, Nassau

Credit: 18 hours

Info: International Conference, Suite C, 189 Lodge Avenue, Huntington Station, NY 11746

January 10-12

"The Brain, Biochemistry, and Behavior-6th Arnold O. Beckman Conference in Clinical Chemistry"

Place: Tarpon Springs, Florida

Credit: 14.5 hours

Info: Dr. Robert Habig, Duke University Medical Center, Box 2902, Durham, NC 27710, 919-684-3905

January 30-February 5

"First Annual Duke Winter CME: The Prevention and Treatment of Surgical Infections"

Place: Nassau, Bahamas

Credit: 25 hours

Info: Cindi Easterling, Office of Continuing Medical Education, Duke University Medical Center, Box 3306, Durham, NC 27710, 919-684-6485

February 17-21

"Pediatrics in Puerto Rico: The 10th Annual Pediatric Symposium of Children's Hospital National Medical Center"

Place: Puerto Rico

Info: Susan Weiss, Children's Hospital National Medical Center, 111 Michigan Avenue, NW, Washington, DC 20010, 202-745-3000

February 21-23

"Gold Coast Seminar: Surgery"

Place: West Palm Beach, Florida

Credit: 8 hours

Info: Cindi Easterling, Office of Continuing Medical Education, Duke University Medical Center, Box 3306, Durham, NC 27710, 919-684-6485

February 24-25

"Second Annual Perspectives on New Diagnostic and Therapeutic Techniques in Clinical Cardiology"

Place: Lake Buena Vista, Florida

Info: American College of Cardiology, 9111 Old Georgetown Road, Bethesda, Md 20814

February 28-March 4

"Annual Meeting of The US-Canada International Academy of Pathology"

Place: Atlanta, Georgia

Info: Dr. Nathan Kaufman, 1103 Chefee Avenue, Augusta, Ga 30904

March 7-9

"Gold Coast Seminar: Pediatrics"

Place: West Palm Beach, Florida

Credit: 8 hours

Info: Cindi Easterling, Office of Continuing Medical Education, Duke University Medical Center, Box 3306, Durham, NC 27710, 919-684-6485

April 18-29

(Application deadline February 2)

"Clinical Cytopathology for Pathologists"

Place: Baltimore, Maryland

Credit: 125 hours

Info: John K. Frost, M.D., 110 Pathology Building, The Johns Hopkins Hospital, Baltimore, Md 21205

The items listed in this column cover the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh 27611, two months prior to the month in which they are to appear.

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North Carolina Medical Society Auxiliary

REPORT FROM THE CONVENTION — 1982

Marguerite E. Tracy, chairman of the North Carolina delegation, sent the following information concerning the National AMA Auxiliary Convention held in Chicago in June.

North Carolina was voted the "Best in the Nation" for publications in all areas, including the *Tarheel Tandem*, *Guide Posts*, the President's Letter and all state-level publications. Anne Hubbard, former president of the North Carolina Auxiliary, was elected to the House of Delegates as a Southern representative on the nominating committee for 1983. She was elected without advance preparation or any planned public relations, an indication of the admiration felt toward Anne by the assembled delegates.

The 60th anniversary of the AMA Auxiliary was celebrated at the national meeting which was attended by 348 delegates. Featured speakers included Rep. Lynn M. Martin, a Republican from Illinois; Rhea Seddon, M.D., a physician and astronaut; and Carol Nadelson, M.D., professor and vice chairman of the Department of Psychiatry at Tufts University School of Medicine.

The auxiliary raised more than \$2 million for the American Medical Association Education and Research Foundation (AMA-ERF) in 1982. This program has produced \$100,000,000 in student aid loans since 1962.

Anita D. Taylor, Winston-Salem, N.C.

News Notes

The Bowman Gray School of Medicine Wake Forest University

The Bowman Gray/Baptist Hospital Medical Center is completing its first year of performing intracoronary thrombolysis, a procedure aimed at limiting the damage done to heart muscle by a heart attack.

The procedure identifies a clot which is responsible for the heart attack by clogging one of the three coronary arteries, and then involves an attempt to dissolve the clot with the drug streptokinase.

According to criteria used at the medical center, intracoronary thrombolysis must begin within four hours of the onset of heart attack symptoms.

In nearly a year of doing the procedure, seven patients underwent intracoronary thrombolysis. In five of the patients, the clot responsible for the individual's

heart attack was dissolved, blood flow to heart muscle was improved and each of the five eventually was discharged without complication resulting from the procedure. The remaining two patients had blockages which could not be dissolved and received conventional treatment in the coronary care unit.

The question still facing medical center doctors is how successful is the procedure in limiting damage done to the heart muscle. The physicians also want to determine if the long-term outlook for patients undergoing the procedure is better than for those heart attack victims who undergo conventional treatment.

What may have been a prototype continuing education meeting was held at the Bowman Gray School of Medicine in September. The meeting, entitled "Clinical Skills Workshops and Review," was sponsored by the school and its Department of Family and Community Medicine.

The five-day meeting concentrated its attention on providing participants with a wide variety of hands-on experiences rather than using the more standard seminar approach of most continuing education programs.

Physicians from as far away as Michigan and Texas participated.

Most of each day's activities for the participants involved taking part in skill workshops on such topics as exercise stress testing, management of common eye injuries, pulmonary function testing and real time scanning.

Events began at 8 a.m. and ended at 9 p.m. The concentration on workshops rather than just seminars was felt to provide the participants with an extra degree of skills which should prove immediately useful in their daily practice of medicine.

An assistant professor and five instructors have been appointed to the fulltime faculty at Bowman Gray.

Dr. Judith O. Hopkins has been appointed assistant professor of medicine (hematology/oncology). She is a graduate of the University of Richmond and received the M.D. degree from the University of Virginia School of Medicine. She completed residency training and a fellowship in oncology at North Carolina Baptist Hospital.

Her primary research interest is the use of plasma exchange in treating cancer patients. She is assistant director of Bowman Gray's plasmapheresis laboratory.

The new instructors are Dr. Wilson C. Beamer, anesthesia (critical care medicine) and surgery (emergency medical services); Dr. Joseph M. (Mac) Ernest III, obstetrics and gynecology; Dr. Nancy S. Gaby, psychiatry; Dr. Philip O. Katz, medicine; and Dr. Steven R. Plunkett, radiology (radiation therapy).

**When painful spasm
is the presenting
symptom...**

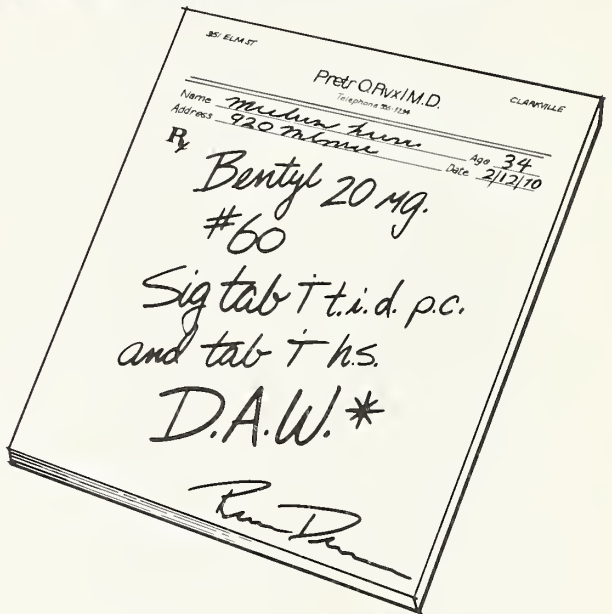


...in the functional bowel/irritable bowel syndrome*

be sure to specify

Bentyl[®]
(dicyclomine hydrochloride USP)

10 mg capsules, 20 mg tablets,
10 mg/5 ml syrup, 10 mg/ml injection



**D.A.W.-Dispense as written*

because:

- ⊕ The Bentyl molecule is a product of original Merrell research.
- ⊕ At Merrell Dow, Bentyl must go through 140 checkpoints/tests from its synthesis through the packaging of the final product.
- ⊕ Bentyl bioavailability of tablets, capsules, syrup and injectable is evidence of its prompt absorption.
- ⊕ Bentyl helps control abnormal gastrointestinal motor activity with minimal anticholinergic side effects. (See Warnings, Contraindications, Precautions, and Adverse Reactions on next page.)
- ⊕ The bioequivalence of the oral dosage forms permits a choice of tablet, capsules, or syrup that satisfies patient's dosage preferences.
- ⊕ Significant pharmacologic effect in the distal colon compared to placebo,¹ shows how Bentyl controls abnormal motor activity in the irritable colon patient.*

*This drug has been classified "probably" effective for this indication.

Merrell Dow

Reference:
1. Chowdhury AR and Lorber SH: Personal communication, 1980.

(See Product Information on the next page before prescribing Bentyl.)

Although the dose of Bentyl used to show pharmacologic effect was 50 mg, which is a higher single dose than that permitted in the labeling, the dose was considered justified, since the recommended daily dose of injectable Bentyl is 20 mg (2 ml) every 4 to 6 hours. Thus, in 8 hours, a patient could receive a total of 60 mg I.M. and, at that time, as a result of the sustained plasma levels from the 20 mg injections at 0 and 4 hours, might show an even higher plasma level than occurs after a single 50 mg dose. Presumably, the same pharmacologic effect would follow. These observations do not constitute evidence of efficacy.

Bentyl®

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection
AVAILABLE ONLY ON PRESCRIPTION
Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy), obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis), paralytic ileus, intestinal atony of the elderly or debilitated patient; unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis.

WARNINGS: In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. There are rare reports of infants, 6 weeks of age and under, administered dicyclomine hydrochloride syrup, who have evidenced respiratory symptoms (breathing difficulty, shortness of breath, breathlessness, respiratory collapse, apnea), as well as seizures, syncope, asphyxia, pulse rate fluctuations, muscular hypotonia, and coma. The above symptoms have occurred within minutes of ingestion and lasted 20 to 30 minutes. The timing and nature of the reactions suggest that they were a consequence of local irritation and/or aspiration rather than a direct pharmacologic effect. No known deaths or permanent adverse effects have been reported. Bentyl syrup should be used with caution in this age group.

PRECAUTIONS: Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy.

Use with caution in patients with:

Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon.

Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension.

Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur.

ADVERSE REACTIONS: Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia; increased ocular tension; loss of taste; headache; nervousness; drowsiness; weakness; dizziness; insomnia; nausea; vomiting; impotence; suppression of lactation; constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of light-headedness and occasionally local irritation.

DOSEAGE AND ADMINISTRATION: Dosage must be adjusted to individual patient's needs.

Usual Dosage

Bentyl 10 mg capsule and syrup: **Adults:** 1 or 2 capsules or teaspoonfuls syrup three or four times daily. **Children:** 1 capsule or teaspoonful syrup three or four times daily. **Infants:** ½ teaspoonful syrup three or four times daily. (Dilute with equal volume of water.)

Bentyl 20 mg: **Adults:** 1 tablet three or four times daily.

Bentyl Injection: **Adults:** 2 ml. (20 mg.) every four to six hours intramuscularly only.

NOT FOR INTRAVENOUS USE.

MANAGEMENT OF OVERDOSE: The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine® (bethanechol chloride USP) should be used.

Product Information as of July, 1980

Injectable dosage forms manufactured by CONNAUGHT LABORATORIES, INC.

Swiftwater, Pennsylvania 18370 or

TAYLOR PHARMACAL COMPANY

Decatur, Illinois 62525 for

Merrell



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1-7052 (Y368C)

MNQ-712

Dr. Sam A. Deadwyler, associate professor of physiology, has been appointed to a four-year term on the Drug Abuse Biomedical Research Review Committee of the National Institute of Drug Abuse. The committee makes recommendations on grant applications to the National Advisory Council on Drug Abuse.

Dr. Robert I. Kohut, professor of surgery (otolaryngology), has been asked to serve on the Audit Committee of the American Otological Society.

Dr. Steven R. Plunkett, instructor in radiology (radiation therapy), has been elected president of the Forsyth County Unit of the American Cancer Society for a one-year term.

Dr. George Podgorny, clinical associate professor of surgery (emergency medical services), has been elected to the editorial board of the Medical Meetings Journal.

Dr. James N. Thompson, associate professor of surgery (otolaryngology), has been invited to serve on the North Carolina District No. 5 Committee on Applicants of the American College of Surgeons for 1983.

Dr. James E. Turner, associate professor of anatomy, has been elected to the Council of the North Carolina Society for Neuroscience. He will serve a three-year term.

Duke University Medical Center

The discovery of a new structure in the lens of the eye by a group of Duke researchers has led to a grant to study a possible link to cataracts.

Using an electron microscope to examine fiber cells in mammalian lenses, the scientists identified a new type of membrane contact between neighboring cells that is structurally different from previous classes of membrane contacts.

The scientists theorize that this new type of contact between cells in the lens may be important in maintaining lens transparency.

Dr. J. David Robertson, chairman of the Department of Anatomy, and Drs. Thomas J. McIntosh and M. J. Costello, assistant professors of anatomy, have received a \$330,745, three-year grant from the National Eye Institute.

The funds will support a continuing study of the new structure and its relationship to normal lenses and cataract lenses.

The original discovery of this membrane contact

was made at Duke by Dr. Sidney Simon of the Department of Anatomy at UCLA, and Drs. Robertson, McIntosh and Costello.

Cataract removal and other routine eye surgery may take less than a day in a new short-term surgery program at Duke.

Patients needing relatively low-risk types of cataract surgery, routine eye plastic surgery or surgery to correct crossed eyes can check into the Eye Center's short-term surgery unit in the morning and be home by early afternoon.

"Our aim is to make surgery less costly and more convenient for patients and get them back on their feet earlier," said Dr. Michael Cobo, director of the Eye Center's short-term surgery program. "The main advantage is decreasing the length of hospital stay and rehabilitating patients more quickly."

"There is obvious savings in reducing the hospital stay," Cobo said. "There is the potential for saving up to \$600 in hospitalization for some of these procedures, and some insurance policies even cover 100% of costs of outpatient surgery instead of the usual 80% for inpatient surgery."

Any of the 11 surgeons on the Eye Center faculty can admit patients to the short-term surgery program, which will operate Monday through Friday. Surgery

will be performed between 7:30 a.m. and 2 p.m. and patients will be released by 5 p.m.

If a patient develops a problem following the surgery, he or she can be transferred to an inpatient room for an overnight stay, if necessary.

Diagnosing cancer will be cheaper, quicker and less risky to patients as more hospitals use thin needles instead of surgery to take tissue samples, according to a Duke pathologist.

A thin-needle aspiration biopsy can be performed in a doctor's office when the suspected cancers are close to the skin, said Dr. William W. Johnston, director of Duke's Division of Cytopathology.

Duke is using the technique before other diagnostic procedures and already the savings have been dramatic, he said.

While the biopsy has not yet gained nationwide acceptance, Johnston said, most hospitals already have the necessary equipment to perform them.

Recent advances in X-ray technology have allowed doctors to use thin-needle biopsies to sample suspected tumors in the lungs, liver and other remote organs, he said. Those cases require an imaging room, but the patient does not have to be put to sleep.

(Continued on page 863)

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Computerized axial tomography, or CAT scans, make three-dimensional X-rays of the areas so doctors can accurately place the needle, Johnston said.

Once the needle is placed, doctors draw sample cells into a syringe and examine them under a microscope.

Avoiding general anesthesia and complicated surgery reduces risk for patients, he said. In addition to being spared the expense of anesthesia and surgery, patients spend less time in the hospital.

Studies indicate that perhaps 50% to 80% of college women binge eat at least once and that 20% to 30% of those will develop a serious problem with bingeing and purging that may require treatment.

A Duke psychologist who works with patients with bulimarexia, a bingeing and purging syndrome, presented some of his findings at the 90th annual convention of the American Psychological Association.

"A certain amount of binge eating is acceptable in our culture, such as at Thanksgiving and Christmas," said Dr. Albert Loro. "But I think anybody who induces vomiting or purges the body with excessive use of laxatives as a means of weight control could be viewed as having a problem. I would say if a person does it more than once a month, it's probably getting into a pattern and he or she may need some help."

Most of Loro's patients are young professional women who are obsessed about their appearance and who learned to binge and purge while in college.

Instead of traditional psychiatric treatment for these young women, Loro uses what he calls a "cognitive-behavioral" approach to treatment.

He tries to get his patients to change the way they think about themselves, their bodies and their diets. In addition to keeping a diary of their eating behavior, treatment involves setting realistic weight goals, challenging unreasonable expectations and perfectionistic thinking, providing nutrition education and information, and training in interpersonal communication and anger control.

Chronic pain may result from a shortage of "pain hormones," Dr. Blaine Nashold reported at a free "Health Night Out" lecture at Duke.

"The chemistry of pain is a recent discovery," said Nashold, professor of neurosurgery and co-director of Duke's Pain Clinic. "The body has a system of substances called pain hormones. Probably what happens is that the body signals 'I am in pain,' this hormone is released, and the pain is reduced. In some people the pain hormones may simply dry up after a while."

Scientists are trying to reproduce the pain hormones in laboratories. Nashold theorized that the reason pain therapies such as electrical pulses and acupuncture work is that they activate pain hormones.

Nashold said chronic pain is the most difficult to treat. One treatment used at Duke's Pain Clinic is electrodes implanted in the body and activated by

pacemakers controlled by the patient. Nashold said 50% to 60% of the patients treated with implants get relief.

Besides treatments involving hormones, surgery and stimulation, Nashold said pain clinics try to deal with other problems of the patient.

"In the pain clinic there are numerous physicians — neurosurgeons, psychiatrists, physio-therapists and others — interested in all aspects of pain, who look at the individual as a whole person," he said.

After a medical evaluation to identify the pain's cause, the clinic staff works with patients and their families. A person's therapy may involve neurosurgery, counseling, electrical implants, biofeedback or a combination of several therapies.

Dr. Jay Arena has been awarded the highest honor of the American Academy of Pediatrics.

Arena, professor emeritus of pediatrics, has won the Jacobi Award for outstanding work in the field of child safety.

Founder and former director of Duke's Poison Control Center, Arena was instrumental in the development of child-proof safety caps for medicine containers.

Arena will receive a \$1,000 award and a plaque in April at the annual meeting of the American Academy of Pediatrics in Philadelphia. Arena is a former president of the academy.

Some childhood eczema, a severe allergic skin condition, can be caused by food allergy, according to a Duke study.

The findings do not support a 1965 consensus report of the American Academy of Pediatrics, which dismissed food allergies as a major factor in eczema.

Pediatric allergist Dr. Hugh Sampson said more than half of 26 children suffering from severe cases of the red, dry, itchy rash were found to be allergic to a specific food.

Within 10 minutes to two hours of being given certain foods in capsule form, 14 of the children developed red, itchy areas over at least 5% of their bodies. Among the foods tested were milk, eggs, wheat, soy protein and meat. By eliminating the problem food from the children's diets, their skin condition vastly improved, Sampson said.

Sampson has received a \$217,000, three-year grant from the National Institute of Allergy and Infectious Disease to study the role of food allergies in severe allergic disorders such as eczema.

Because skin tests can show false reactions to certain foods, Sampson said, such tests are much less effective for diagnosis than giving the foods in capsule form.

"A child might have five to 10 positive skin tests but might be able to eat all but one of the foods," he said. "It's important to do a food challenge test if a child reacts to skin tests, or else so many foods may be



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restricted unnecessarily that it could lead to a nutritionally deficient diet.”

Nitrogen oxides (NO₂) in the atmosphere are more harmful than researchers once believed, according to evidence presented by a Duke pharmacologist at an international symposium.

Nitrogen oxides are created by the burning of fossil fuels, and the two main sources are power plants and automobiles.

Dr. Dan Menzel, professor of pharmacology and medicine, met recently with representatives from 10 other countries in the Netherlands. Menzel said the research presented by other representatives concurs with his evidence that levels of nitrogen oxides near those found in urban air kill cells in human and animal lungs.

The evidence is significant, Menzel said, because up to now, scientists believed that nitrogen oxides merely damaged lung cells, and that the cells could repair themselves over time. By killing cells, NO₂ can contribute to serious lung disease, including emphysema.

“Our research data and data produced by researchers in other countries indicate that the chances of curing lung disease caused by air pollution are pretty poor,” Menzel said. “The data suggest that even short-term exposures to NO₂ can cause chronic lung disease.”

Associate Director of Hospital Laboratories Robert L. Habig received the Award in Foreign Relations in Clinical Chemistry from the American Association for Clinical Chemistry. The award includes a three-week trip to Columbia where Habig will study laboratory medicine and will teach a system called matrix management, which is useful in large laboratories.

Dr. Harry Gallis has been named Area Health Education Center (AHEC) coordinator for the medical center.

Gallis is director of Continuing Medical Education for the medical school and assistant professor in the Departments of Medicine and Microbiology and Immunology.

Gallis, who will be working closely with the Fayetteville AHEC, succeeds Dr. Frank Lecocq, associate professor of medicine, who died in June.

Gallis graduated magna cum laude from Princeton University and received his medical degree from Duke. He joined the Duke faculty as an associate in 1973. He has twice received the Duke House Staff Award for Excellence in Teaching.

Jacqueline A. Reynolds, professor of physiology, received a \$66,134 research grant from the National Heart, Lung and Blood Institute to study the assembly of circulating serum lipoproteins.

Joseph C. Greenfield Jr., J. B. Duke Professor of Medicine, received a \$131,653 research grant from the National Heart, Lung and Blood Institute to study “Factors Affecting Distribution of Myocardial Flow.”

Page A. Anderson, associate professor of pediatrics and assistant professor of physiology, received a \$57,718 research grant from the National Heart, Lung and Blood Institute to study biophysical aspects of the developing heart.

Michael K. Reedy, associate professor in the Department of Anatomy, received a research grant of \$27,000 from the Muscular Dystrophy Association for his project, “Weighing Myofibrils by Scanning Microinterferometry.”

David C. Richardson, associate professor of biochemistry, received a research grant of \$103,944 from the National Institute of General Medical Sciences to study “Crystallographic Analysis of Protein Structures.”

Allen D. Roses, professor of medicine and assistant professor of biochemistry, received a research grant of \$97,557 from the National Institute of Neurological and Communicative Disorders and Stroke. Roses’ project is “Biochemical Studies of Membrane Proteins in Duchenne MD.”

Ruby L. Wilson, professor and dean of the School of Nursing, received an award of \$105,126 from the National Institute of Mental Health for a project, “Mental Health Psychiatric Nursing — Underserved Areas.”

Rosalind A. Coleman, assistant professor of pediatrics, received a new investigator research award of \$27,926 from the National Heart, Lung and Blood Institute.

Rebecca Buckley, J. B. Sidbury Professor of Pediatrics and professor of microbiology and immunology, received a \$41,638 national research service award from the National Institute of Allergy and Infectious Diseases. Buckley is studying allergy and clinical immunology.

Khalil Kariman, assistant professor of medicine and director of the Medical Intensive Care Unit, received a \$75,702 research grant from the National Institute of General Medical Sciences for “Monitoring of Cytochrome Redox State in Shock.”

Tao-shih Hsieh, assistant professor in the Department of Biochemistry, received a \$63,000 junior faculty research award from the American Cancer Society.

William T. Creasman, professor in the Department of Obstetrics and Gynecology, received a \$63,082 grant from the National Cancer Institute for a gynecologic oncology group.

Walter R. Guild, professor of biochemistry, received a \$44,802 grant from the National Institute of General Medical Sciences for a study, “Pneumococcal Phage as Genetic Tools.”

Donald B. Hackel, professor of pathology, received a \$32,292 research career award from the National Heart, Lung and Blood Institute for pathologic,

An added complication... in the treatment of bacterial bronchitis*



Brief Summary.

Consult the package literature for prescribing information.

Indications and Usage: Cefclor* (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

Contraindication: Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistix* tablets but not with Tes-Tape* (Glucose Enzymatic Test Strip, USP, Lilly).

Usage in Pregnancy:—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy:—Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefclor therapy are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been reported in conjunction with therapy with Cefclor.

Hypersensitivity reactions have been reported in about 15

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cefclor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.⁷

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percent of patients and include morbilliform eruptions (1 in 100), Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthritis and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor* (cefclor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain:—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic:—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic:—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal:—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

References

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2. Antimicrob. Agents Chemother., 11:470, 1977
3. Antimicrob. Agents Chemother., 13:584, 1978
4. Antimicrob. Agents Chemother., 12:490, 1977
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), 11:880, Washington, D.C.: American Society for Microbiology, 1978
6. Antimicrob. Agents Chemother., 13:861, 1978
7. Data on file, Eli Lilly and Company
8. Principles and Practice of Infectious Diseases (edited by G.L. Mandell, R.G. Douglas, Jr., and J.E. Bennett), p. 487, New York: John Wiley & Sons, 1979



Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285
Eli Lilly Industries, Inc.
Carolina, Puerto Rico 00630

200086

physiologic and metabolic heart studies.

Thomas J. McIntosh, assistant professor in the Department of Anatomy, received a \$41,930 research grant from the National Institute of General Medical Sciences for his study, "Lipid Bilayer Structure: Effect of Small Molecules."

Samuel W. Warburton Jr., associate professor in the Department of Community and Family Medicine, received a family medicine training grant of \$176,890 for graduate training grants in family medicine. He also received a grant of \$259,080 for a predoctoral training program in family medicine.

William S. Lynn, professor of medicine and associate professor of biochemistry, received a national research service award of \$99,916 from the National Institute of Environmental Health Sciences for research into "Environment and the Lungs: Toxins and Mediators."

Robert L. Hill, professor and chairman of the Department of Biochemistry, received a \$536,465 national research service award from the National Institute of General Medical Sciences. He also received a \$333,151 national research service award from the National Institute of General Medical Sciences for a program, "Organization and Functions of Cellular Structures."

Elliot Mills, professor of pharmacology, received \$85,850 from the National Heart, Lung and Blood Institute for research on "Blood Pressure Control and Abnormal Sympathetic Development."

Jeffrey L. Houpt, professor and acting chairman of the Department of Psychiatry, received a \$60,677 graduate training grant from the National Institute of Mental Health for "Consultation and Liaison Psychiatry."

R. Sanders Williams, associate professor in the division of cardiology, received a \$150,000 grant from PepsiCo, Inc. for the "PepsiCo Foundation Exercise-Heart Project."

Andrew C. Bragdon in the Department of Pharmacology received a \$20,040 grant from the National Institute of Neurological and Communicative Disorders and Stroke to study neurology.

Patricia H. Cotanch, associate professor in the School of Nursing, received a \$33,216 new investigator research award from the National Cancer Institute for a project, "Relaxation Training to Reduce Aversion to Chemotherapy."

Dolph Adams, associate professor of pathology, was awarded a \$29,575 grant from the Kroc Foundation for the Advancement of Medical Science to study "Cytolytic Proteases from Mononuclear Phagocytes in Rheumatoid Arthritis Effects on Connective Tissue Cells and their Regulation."

James A. Bobula, assistant professor of community and family medicine, received a family medicine training grant of \$168,125 from the division of medicine for family medicine faculty development.

David W. Scott, professor of immunology, received a \$102,992 research grant from the National Cancer Institute to study the immune response to modified

self and tumor antigens.

Gilbert Baumann, assistant medical research professor in the Department of Physiology, was awarded a \$31,841 research grant from the National Institute of General Medical Sciences to study "Experimental Testing of the Modular Channel Concept."

P. Michael Conn, assistant professor of pharmacology, was awarded a \$38,530 development award from the National Institute of Child Health and Human Development for the study of "Gonadotropin Releasing Hormone Mechanism."

Thorir Bjornsson, assistant professor of pharmacology and medicine, was awarded a \$51,396 research grant from the National Heart, Lung and Blood Institute to study the clinical pharmacology of heparin.

Elaine Crovitz, associate professor of psychology and assistant professor of surgery, received \$30,791 from the Institute of Mental Health for a graduate training award in clinical psychology.

East Carolina University School of Medicine

The first physician to complete residency training in psychiatric medicine at the School of Medicine finished the program's requirements in August.

Dr. Judy Yongue, a native of Washington, N.C., will establish a private practice in psychiatry in Greenville. She received her medical degree from the University of North Carolina-Chapel Hill and completed an internship at Watts Hospital, Durham, N.C., and Philadelphia General Hospital in Pennsylvania.

In 1965 she moved to Greenville and was associated with the Pitt and Beaufort county health departments and was a family physician in private group practices in Greenville and Farmville. She later served as staff physician with the ECU Student Health Service before entering residency training in psychiatry.

The medical school now has nine physicians specializing in psychiatric medicine, which requires four years of training following the completion of medical school. Residents participate in the care of patients on the psychiatric unit at Pitt Memorial Hospital, the Pitt County Mental Health Center, Cherry Hospital in Goldsboro, the ECU Student Health Center and the School of Medicine Clinics.

Dr. David L. Buch, a third-year psychiatry resident, has been awarded a Falk Fellowship by the American Psychiatric Association. Buch is the first ECU resident to receive the honor.

Buch, one of 12 postgraduate physicians in the country selected for the honor, will become an active member of the APA's Council on National Affairs and participate on several national and regional committees.

A native of New York, Buch received his medical degree from Vanderbilt University and was a Public Health Service physician in Snow Hill for three years

prior to entering ECU's residency training program.

The Department of Family Medicine has announced the appointment of Drs. Mallie B. Penry and Elizabeth R. Gamble as faculty members in the geriatric section.

Penry will be associate professor in the department and will also hold a faculty appointment in the ECU School of Nursing. A native of Winston-Salem, she received her undergraduate degree from ECU and her master's degree in nursing from the University of Florida in Gainesville. She completed her doctoral degree at the University of North Carolina at Greensboro.

Penry spent the 1981-82 academic year as a Robert Wood Johnson Nurse Fellow in Primary Care Gerontology at the University of Rochester in Rochester, N.Y.

She will serve with Dr. Harold Kallman, head of the geriatric section in the Family Medicine Department, as co-director of the teaching nursing home project currently under way. The project provides geriatric training for medical residents and graduate nurses at Greenville Villa, a local extended care facility.

Gamble will be a clinical instructor with the department. A native of Lincolnton, she received her undergraduate degree from UNC-Charlotte and her master's degree in public health and medical degree from UNC-Chapel Hill. She completed her residency training in medicine at ECU and Pitt Memorial Hospital, after spending one year at both North Carolina Memorial Hospital and Rochester General Hospital, Rochester, N.Y.

During 1980-81, Gamble was a fellow in geriatrics and medicine at Strong Hospital and Monroe Community Hospital in Rochester.

Dr. Todd L. Savitt has been appointed associate professor of medical humanities.

Prior to his appointment, he was associate professor and acting chief of the Division of Social Sciences and Humanities for the Department of Community Health and Family Medicine at the University of Florida. He was a board member of the Florida Endowment for the Humanities and a member of the program committee of the Southern Historical Association.

Savitt is presently completing a book entitled, "Medicine After Emancipation: The Health Care Problems of Blacks in the Postbellum South." The research for the book was funded through a grant from the National Institutes of Health.

Savitt received his undergraduate degree from Colgate University. He later received his master's degree and his doctoral degree from the University of Virginia. He did postdoctoral study in the history of medicine and the history of science at Duke University.

Dr. Henry O. Stone Jr. has joined the Department of Microbiology as associate professor.

Prior to his appointment, he was associate professor

and acting chairman of the Department of Microbiology at the University of Kansas. He also worked with the Mid-American Cancer Center Program at the University of Kansas Medical Center.

A native of Spartanburg, S.C., Stone received his undergraduate degree from Wofford College. He received his doctoral degree from Duke University, where he was a National Defense Act Fellow in biophysics and radiation biology.

Drs. Donald R. Lannin and Larry S. Lewis have joined the Department of Surgery as assistant professors of general surgery.

Lannin received his undergraduate degree from Stanford University in California and his medical degree from the University of Minnesota in Minneapolis, where he also completed his postgraduate training in surgery.

Lewis graduated from the University of Michigan and Wayne State University School of Medicine in Detroit. Before coming to ECU, he was chief administrative resident of surgery with Wayne State University Affiliated Hospitals where he completed residency training.

Dr. Irvin L. Blose, professor of psychiatric medicine, attended The Society of Teachers of Family Medicine meeting September 13-14 in Bethesda, Md. Blose presented "Alcoholism Education in Departments of Family Practice."

Two faculty members from the Department of Surgery presented papers at the Ninth International Congress of Transplantation Society in Brighton, England, August 23-27.

Dr. Judith M. Thomas, associate professor, presented three papers: "Selective Action of Rabbit Antithymocyte Globulin (RATG) on OKT4 T Cell Subset in Rhesus Monkeys," "Immunosuppressive Effectiveness of Antithymocyte Globulin (ATG) Correlates with Induction of Suppressor Cells" and "Suppressor Cell Interactions Regulating Lymphocyte Activation in Primates Treated with Antithymocyte Globulin (ATG)."

Dr. Francis T. Thomas, professor, presented a paper entitled "Quantitation of Immune Responsiveness Pre-Transplant by Recipient *in vitro* Generation of Cytotoxic T Effector Cells."

Dr. E. Jackson Allison, chairman of the Department of Emergency Medicine, has been invited to serve as a national faculty member for the National Association of Emergency Medical Technicians and the North Carolina Association of Emergency Medical Technicians.

Dr. Leonard S. English, associate professor of microbiology, presented a seminar entitled "Studies on

the Regulation of Immune Responses *in vivo*" in July at the Institute of Immunology in Basel, Switzerland.

Dr. Uwe R. Müller, assistant professor of microbiology, and Martin L. Romantschuk, a special fellow from the University of Helsinki, Finland, attended the Cold Spring Harbor Bacteriophage Meeting in Cold Spring Harbor, N.Y., August 25-29. The two presented "Loss of a Hairpin Structure in the J-F Intercistronic Region of Bacteriophage X174 Causes Overexpression of Downstream Genes" during the meeting.

Müller also coauthored an article with Dr. Walter M. Fitch from the physical chemistry department at the University of Wisconsin in Milwaukee. The article, "Evolutionary Selection for Perfect Hairpin Structures in Viral DNAs," appeared in the August issue of *Nature*.

Dr. David R. Garris, assistant professor of anatomy, has published papers in the June and July issues of *Proceedings of the Society for Experimental Biology and Medicine*. The title of the first paper was "The Luteotrophic Effects of Estradiol and Prolactin in the Absence of LH in the Hysterectomized, Pseudopregnant Rat."

Garris collaborated with Dr. Richard Rodway, assistant professor of physiology and nutrition at the University of Leeds in England, and Dr. Guela Gibori, associate professor of physiology at the University of Illinois School of Medicine in Chicago, on the second paper, "Effects of Ovarian Steroids on Luteal Function: Prevention of Luteolysis Following LH-Neutrilization in the Pseudopregnant Rat."

Garris has also received a grant of \$24,800 from The Rockefeller Foundation to support a study of the "Uterine Blood Flow and Intrauterine Development of the Fetal-Placental Unit in the Guinea Pig."

Greg Allen, doctoral candidate in the Department of Anatomy, has coauthored an article with Dr. Thomas M. Louis, associate professor of anatomy, and Dr. Arthur E. Kopelman, professor of pediatrics. The article, "Brain Prostaglandins E_2 and F_{2x} following Neonatal Asphyxia in the Guinea Pig," appeared in the July-August issue of *Biology of the Neonate*.

University of N.C. School of Medicine & N.C. Memorial Hospital

A regular exercise program is an integral part of helping to prevent the crippling joint diseases associated with hemophilia, according to physicians of The School of Medicine. They prescribe a 15-minute daily exercise program for patients with severe hemophilia and encourage them to participate in recreational sports such as swimming, softball and kickball.

Dr. Walter B. Greene, assistant professor of orthopedic surgery, explained that repeated bleeds into the joints frequently cause severe arthritis in patients with hemophilia. Greene said bleeds into a joint can cause a synovitis or inflammation of the joint lining. The synovitis produces destructive enzymes which destroy the joint's surface and cause painful arthritis.

The pain and synovitis associated with a joint bleed inhibit muscle action, he explained. "If the patient gets into a cycle of recurring bleeds, he not only has more synovitis, but also loses more and more muscle strength. The loss of muscle strength causes double trouble because the muscles help to protect the joints in the first place."

The knee is the joint most commonly affected in hemophiliacs, so Greene has designed a modified isokinetic exercise program for the knee muscles. "Our goal was to design an exercise program which would effectively strengthen the muscles while being done at home without special equipment," he explained.

Greene studied 32 hemophiliac patients, ranging in age from seven to 51 years, over a six-month period. Each patient's strength was measured at the beginning of the study and all were encouraged to do the strengthening program for 15 minutes every day.

Greene said patients are encouraged to learn how to swim and to participate in competitive swimming. "Swimming exercises most muscle groups and has a low index of injury when compared to other sports. Also, if the patient does develop severe joint problems, it may be the only athletic activity he can continue to enjoy."

Greene is one of a team of health professionals at the UNC-CH Comprehensive Hemophilia Diagnostic and Treatment Center which provides treatment and counseling for about 1,000 people from throughout the Southeast with bleeding disorders.

Children with muscular dystrophy frequently have problems in school but staff members of the muscular dystrophy clinic at North Carolina Memorial Hospital have found that many of these problems can be eliminated if parents, teachers and health professionals work together.

Dr. Colin D. Hall, director of the clinic, and Dr. Patricia Porter, a communication disorders specialist, recently completed a study of 35 patients with neuromuscular disease and found that 83% of them had school difficulties.

"The school experiences of many of these children had been limited in one way or another by their disease," Hall said, "and in most cases these limitations were the result of inadequate planning or inadequate education of the parties involved."

He said the muscular dystrophy team at the School of Medicine was able to work with the parents and schools and find solutions to 75% to 80% of the problems.

"Most of the school problems were related to difficulties in transportation and access, difficulties with

adaptation of school tasks to the handicapped, and, most important, difficulties which arise because parents and teachers don't understand the disease," he explained.

Hall said that children with degenerative neuromuscular disease present a unique set of educational problems because they steadily lose their motor skills while maintaining their intellectual abilities.

"This means there must be continuous evaluation of the school situation and academic activities if the child is to have an education that remains appropriate over time," he said.

"In some cases we looked at, the physical disabilities of the children were wrongly equated with mental retardation," Hall continued. "One child had been inappropriately placed in a class for mentally retarded children and then withdrawn from school because when he was six years old his parents had been told by a physician that he would be unable to learn and would die soon."

Hall said that after intellectual and academic evaluation, the child was placed in a special high school class and at age 17 is happily learning to read, write and develop vocational skills.

Six children in the study had trouble with physical education, he said, and one had been forced to repeat a year at school because he could not pass physical education.

Hall said the team found that teachers generally look at education as a way of preparing a child for adulthood. "If the teacher is faced with a child who is at risk for an early death, he or she may not know how to respond. The teacher may have too high or too low expectations or may completely withdraw from the child."

Meeting with the individual teacher, explaining the disease and its course, and working out appropriate education goals and behavior modification patterns has been very successful, he said. "Instead of being frustrated and angry at disruptive or unproductive behavior, the teacher becomes an important member of the treatment team and a positive force in the child's life."

Hall stressed that school is too important a part of a child's life for it to be neglected because of a neuromuscular disease. "Children who do not live into adulthood will spend a major part of their total lives in school, and a good educational and social experience will greatly enhance the limited time available to them," he explained.

The muscular dystrophy clinic at N.C. Memorial is recognized by the Muscular Dystrophy Association, which pays a large portion of treatment costs and provide braces and other therapeutic equipment.

Three researchers at the University of North Carolina at Chapel Hill have been included in a list of the 1,000 most-cited contemporary scientists compiled for the Institute for Scientific Information in Philadelphia.

They are: Dr. George R. Breese, professor of psychiatry and pharmacology; Dr. Robert Utiger, professor of medicine; and Dr. Ernest L. Eliel, William Rand Kenan Jr., professor of chemistry.

The three scientists were included in a list of 1,000 contemporary authors from 252 academic institutions throughout the world cited for articles they published from 1965 to 1978. The study was based on data from journals indexed in Science Citation Index; citations to books were not included. Each of the three UNC-CH scientists had more than 2,970 citations to his credit.

Breese came to Chapel Hill in 1968 after two years as a research associate in pharmacology and toxicology at the National Institute of General Medical Sciences and the National Institute of Mental Health. He is a member of the Biological Sciences Research Center and the Center for Alcohol Studies.

His research interests include developmental neuropharmacology, alcohol antagonists, peptide pharmacology, compensatory mechanisms and neural interactions.

Breese received B.S. and M.S. degrees from Butler University in Indianapolis and a Ph.D. in pharmacology from the University of Tennessee. He is a member of the American Association for Pharmacology and Experimental Therapeutics, the American Association for the Advancement of Science and the Society for Neuroscience. He is a fellow of the American College of Neuro-psychopharmacology.

A native of Bridgeport, Conn., Utiger is director of the School of Medicine's Clinical Research Unit, part of a network of federally supported research centers. His specialty is pituitary-thyroid physiology and disease.

Utiger came to Chapel Hill in 1979 after 10 years as the chief of the endocrine section in the Department of Medicine at the University of Pennsylvania School of Medicine. He is a member of the American Thyroid Association, the American Federation for Clinical Research, the Endocrine Society, the Central Society for Clinical Research, the American Society for Clinical Investigation, the Association of American Physicians and the International Society for Neuroendocrinology. Utiger also is a fellow of the American College of Physicians.

Eliel, a faculty member at UNC-CH since 1972, is one of the world's leading experts in stereochemistry and conformational analysis, which he describes as the study of "how molecules shape up to do business with other molecules."

Before coming to Chapel Hill as a Kenan professor, Eliel was a faculty member at the University of Notre Dame for 24 years. He chaired the Chemistry Department there from 1964 to 1966. A member of the National Academy of Sciences, Eliel has received numerous professional awards and honors, including the Manufacturing Chemists Association College Chemistry Teachers' Award, which he received in 1965. He was elected a fellow of the American Academy of Arts and Sciences in 1980.

A native of Germany, Eliel earned a degree in physical and chemical sciences from the University of Havana, Cuba, and a Ph.D. in chemistry from the University of Illinois. He also attended the University of Edinburgh.

Roy R. Hantgan, a research assistant professor of biochemistry and nutrition, has received an Established Investigatorship award from the American Heart Association. Hantgan's primary field of study is the molecular mechanism of blood coagulation which includes the conformation of fibrinogen and fibrinogen.

Hantgan earned his Ph.D. from Cornell in 1974 in physical chemistry and spent three years in postdoctoral research as a staff fellow at the National Institute of Health. He was appointed to the UNC-CH faculty in 1977.

The American Heart Association Established Investigatorship award is for a five-year period.

Charles Jennette, assistant professor of pathology and director of the immunopathology laboratory at N.C. Memorial Hospital, was given the National Kidney Foundation of North Carolina's 1982 research grant award at the group's annual meeting in Raleigh. Jennette received the award in the name of Joann Craig Brickell.

William N. P. Herbert, assistant professor in the Department of Obstetrics and Gynecology, was presented a Distinguished Young Alumnus Award from Elon College. Herbert is a member of Elon's class of '68.

Eugene S. Mayer, director of AHEC and associate dean, spent four weeks consulting with the faculty of the University of Alexandria, Egypt, School of Medicine on the decentralization of medical education to the community hospitals in that country.

A number of faculty and staff members from the Department of Family medicine participated in the sixth Family Medicine Conference Day. The program featured presentations of research activities by

UNC-affiliated family practice residency programs and was moderated by Drs. Richard Baker and Robert Gwyther.

Gordon B. Burnett, associate professor of psychiatry, presented a paper titled "Psychopharmacology Update: The New Generation of Antidepressants" at the North Carolina Medical Society annual meeting in Pinehurst on May 8.

Robert S. Greenwood, assistant professor of neurology, has been awarded a five-year Teacher-Investigator Award from the National Institute of Neurological and Communicative Disorders and Stroke, effective July 1.

The award supports expansion of the teaching programs in neurology and pediatric neurology. The award will also be used in continuing Greenwood's investigations into the role of neuropeptides and synaptic mechanisms in epilepsy.

Don W. Powell, professor of medicine, chief, division of digestive disease and nutrition, was an invited speaker at the XIII International Congress of Microbiology in Boston on August 9. His topic was titled "Enterotoxigenic Diarrhea: Mechanisms and Prospects for Therapy."

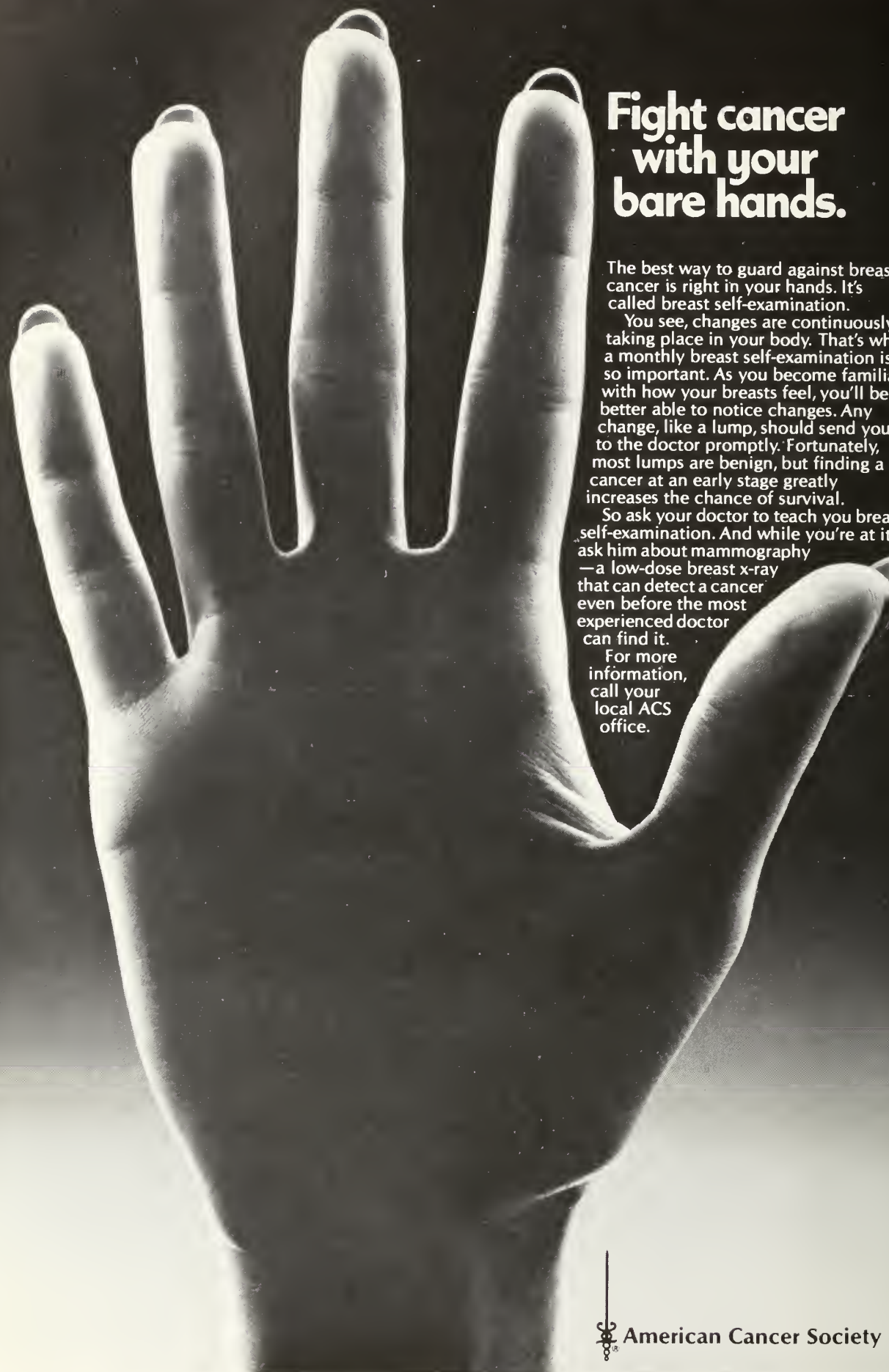
Mary Ellen Jones, Kenan Professor and chair of biochemistry, presented a lecture titled "The Role of Multifunctional Enzymes in Pyrimidine Biosynthesis in Higher Eukaryotes" at the International Congress of Biochemistry in Perth, Australia, August 15-21. Jones also presented a seminar at the Seoul National University and another seminar at the Korea Advanced Institute of Science and Technology Seoul, Korea.

Kenneth C. Mills, assistant director for the Center for Alcohol Studies, recently chaired a symposium on community approaches to the prevention of alcohol-related problems at the 90th annual convention of the American Psychological Association in Washington, D.C. Mills also presented his research on the effects of alcohol upon human cognitive performance.

FRANCES (FANNY) BURNEY [1752-1840]

You must not sneeze. If you have a vehement cold, you must take no notice of it; if your nose-membranes feel a great irritation, you must hold your breath; if a sneeze still insists upon making its way, you must oppose it, by keeping your teeth grinding together; if the violence of the repulse breaks some blood-vessel, you must break the blood-vessel — but not sneeze.

Letter to Esther Burney, December 1785



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Volume 43 January-December, 1982

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Press of
Edwards & Broughton Company
P.O. Box 27286

1821 North Boulevard

Raleigh, N.C. 27611

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